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| Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |         |         |              |                                                                                               |               |         |         |         | Date: February 2015 |                  |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|---------|--------------|-----------------------------------------------------------------------------------------------|---------------|---------|---------|---------|---------------------|------------------|------------|
| Appropriation/Budget Activity<br>2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                          |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |               |         |         |         |                     |                  |            |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Prior Years | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO                                                                                   | FY 2016 Total | FY 2017 | FY 2018 | FY 2019 | FY 2020             | Cost To Complete | Total Cost |
| Total Program Element                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -           | 43.497  | 24.566  | 48.339       | -                                                                                             | 48.339        | 59.983  | 45.709  | 35.515  | 31.323              | Continuing       | Continuing |
| 194: Engine Driven Gen Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -           | 4.858   | 5.872   | 9.862        | -                                                                                             | 9.862         | 6.450   | 4.185   | 4.877   | 7.124               | Continuing       | Continuing |
| EC9: Contingency Basing Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -           | -       | 0.982   | 2.541        | -                                                                                             | 2.541         | 2.350   | 1.985   | 1.986   | 1.999               | -                | 11.843     |
| EJ9: Maneuver Support Vessel (Light) (MSV(L))                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -           | -       | -       | 10.066       | -                                                                                             | 10.066        | 18.586  | 14.522  | -       | -                   | -                | 43.174     |
| H01: Combat Engineer Eq Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -           | 2.099   | 1.038   | 1.139        | -                                                                                             | 1.139         | 2.503   | 3.928   | 3.600   | -                   | Continuing       | Continuing |
| H02: Tactical Bridging - Engineering Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -           | 23.552  | 6.988   | 11.619       | -                                                                                             | 11.619        | 6.699   | 2.207   | 7.338   | 5.956               | Continuing       | Continuing |
| H14: Materials Handling Equipment - Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -           | 0.288   | 0.283   | 0.628        | -                                                                                             | 0.628         | 1.166   | 0.751   | 0.630   | 0.641               | Continuing       | Continuing |
| L39: Field Sustainment Support Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -           | 1.729   | 1.687   | 1.849        | -                                                                                             | 1.849         | 4.156   | 3.219   | 2.308   | 3.078               | Continuing       | Continuing |
| L41: Water And Petroleum Distribution - Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -           | 2.508   | 3.193   | 4.038        | -                                                                                             | 4.038         | 8.669   | 5.256   | 4.645   | 4.645               | Continuing       | Continuing |
| L43: ENGINEER SUPPORT EQUIPMENT - ED                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -           | -       | 0.575   | 1.246        | -                                                                                             | 1.246         | 1.259   | 1.260   | 1.766   | 0.666               | Continuing       | Continuing |
| L46: Maintenance Support Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -           | 1.191   | 1.003   | 1.412        | -                                                                                             | 1.412         | 2.103   | 2.072   | 1.902   | 1.938               | Continuing       | Continuing |
| L47: Improved Environmental Control Units Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -           | 2.867   | -       | 0.976        | -                                                                                             | 0.976         | 1.468   | 1.970   | 3.865   | 2.199               | Continuing       | Continuing |
| VR7: Combat Service Support Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -           | 4.405   | 2.945   | 2.963        | -                                                                                             | 2.963         | 4.574   | 4.354   | 2.598   | 3.077               | Continuing       | Continuing |
| 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. |             |         |         |              |                                                                                               |               |         |         |         |                     |                  |            |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Army | <b>Date:</b> February 2015 |
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| <b>Appropriation/Budget Activity</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |
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Decrease from FY 2015 BES to FY 2015 PB reflects adjustments to all projects within this PE.

| <b>B. Program Change Summary (\$ in Millions)</b> | <b><u>FY 2014</u></b> | <b><u>FY 2015</u></b> | <b><u>FY 2016 Base</u></b> | <b><u>FY 2016 OCO</u></b> | <b><u>FY 2016 Total</u></b> |
|---------------------------------------------------|-----------------------|-----------------------|----------------------------|---------------------------|-----------------------------|
| Previous President's Budget                       | 41.682                | 24.581                | 32.525                     | -                         | 32.525                      |
| Current President's Budget                        | 43.497                | 24.566                | 48.339                     | -                         | 48.339                      |
| Total Adjustments                                 | 1.815                 | -0.015                | 15.814                     | -                         | 15.814                      |
| • Congressional General Reductions                | -                     | -0.015                |                            |                           |                             |
| • Congressional Directed Reductions               | -                     | -                     |                            |                           |                             |
| • Congressional Rescissions                       | -                     | -                     |                            |                           |                             |
| • Congressional Adds                              | -                     | -                     |                            |                           |                             |
| • Congressional Directed Transfers                | -                     | -                     |                            |                           |                             |
| • Reprogrammings                                  | 3.200                 | -                     |                            |                           |                             |
| • SBIR/STTR Transfer                              | -1.385                | -                     |                            |                           |                             |
| • Adjustments to Budget Years                     | -                     | -                     | 15.814                     | -                         | 15.814                      |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |         |         |                 |                                                                                                  |                  |         |         |                                                     | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>194 / Engine Driven Gen Ed |                     |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                             | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| 194: Engine Driven Gen Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -              | 4.858   | 5.872   | 9.862           | -                                                                                                | 9.862            | 6.450   | 4.185   | 4.877                                               | 7.124               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                   | -                   |                     |               |
| Note<br>Improved Power Distribution Illumination Systems Electrical (IPDISE)funds in this project line are a realignment of funds from 0603804A Project G-11, due to the program transitioning into the EMD Phase.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |         |                 |                                                                                                  |                  |         |         |                                                     |                     |                     |               |
| A. Mission Description and Budget Item Justification<br>This project supports the Tactical Electric Power (TEP) program which is established to develop a Modernized, Standard Family of Mobile Electric Power Generating Sources (MEPGS) 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 MEPGS 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. FY16 funds will prepare the Improved Power Distribution Illumination Systems Electrical (IPDISE)/Microgrids performance specification and initiate the EMD phase. Funding in FY16 will also support the Small Tactical Electric Power (STEP) EMD phase. |                |         |         |                 |                                                                                                  |                  |         |         |                                                     |                     |                     |               |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                             | FY 2015             | FY 2016             |               |
| Title: Large Advanced Mobile Power Sources (LAMPS) and Improved Power Distribution Illumination Systems Electrical (IPDISE)/ Microgrids Engineering & Manufacturing Development (EMD) Phase.<br><br>Description: Prepare LAMPS and IPDISE/Microgrids performance specification and begin EMD Phase<br><br>FY 2014 Accomplishments:<br>Continue EMD Phase of LAMPS.<br><br>FY 2015 Plans:<br>Continue EMD Phase of LAMPS and IPDISE/Microgrids.<br><br>FY 2016 Plans:<br>Complete EMD Phase of LAMPS. Continue EMD Phase of IPDISE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |         |                 |                                                                                                  |                  |         |         | 4.858                                               | 4.510               | 2.040               |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         |                                                     |                     |                     |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         |                                                     |                     |                     |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         |                                                     |                     |                     |               |
| Title: Small Tactical Electric Power (STEP) Engineering & Manufacturing Development (EMD) Phase<br>Description: Begin EMD Phase for the STEP program.<br><br>FY 2015 Plans:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 |                                                                                                  |                  |         |         | -                                                   | 1.362               | 7.822               |               |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                |                         |                                                                                                             |                          |                |                | <b>Date:</b> February 2015                                        |                |                             |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |                         | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                          |                |                | <b>Project (Number/Name)</b><br>194 / <i>Engine Driven Gen Ed</i> |                |                             |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                |                         |                                                                                                             |                          |                |                | <b>FY 2014</b>                                                    | <b>FY 2015</b> | <b>FY 2016</b>              |                   |
| Initiate the EMD Phase for the STEP program.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |
| <b>FY 2016 Plans:</b><br>Continue EMD for the STEP prgram.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                         |                                                                                                             |                          |                |                | 4.858                                                             | 5.872          | 9.862                       |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016<br/>Base</b> | <b>FY 2016<br/>OCO</b>                                                                                      | <b>FY 2016<br/>Total</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b>                                                    | <b>FY 2020</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • 643804.G11: <i>Logistics and Engineer Equipment - Adv Dev G11</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2.416          | 4.011          | 8.857                   | -                                                                                                           | 8.857                    | 6.441          | 4.084          | 8.258                                                             | 8.414          | Continuing                  | Continuing        |
| • MA9800: <i>Generators and Associated Equipment</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 40.129         | 115.190        | 166.356                 | -                                                                                                           | 166.356                  | 136.610        | 139.196        | 146.266                                                           | 135.813        | Continuing                  | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |
| <p>LAMPS (Large Advanced Mobile Power Sources) Engineering &amp; 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 Target (FPI-FT) 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&amp;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) will prepare the program's performance specification and initiate the EMD phase and Microgrids will design and test the Advanced Medium Mobile Power Sources (AMMPS) microgrid feeder distribution box(es) (Power Distribution Unit). The IPDISE program will enter the acquisition process at Milestone B, EMD. The Small Tactical Electric Power (STEP) program will use a multi-phase acquisition strategy. STEP System Development and Demonstration (SDD) will be separated into two phases; Phase I is System Development and Phase II is System Demonstration. The STEP program will enter the acquisition process at Milestone B, EMD.</p> |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                |                         |                                                                                                             |                          |                |                |                                                                   |                |                             |                   |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army                                   |                              |                                                                        |                |         |               |                                                                                                  |               |                 |               |                                                     |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5                                                |                              |                                                                        |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>194 / Engine Driven Gen Ed |               |                     |                     |               |                                |
| Management Services (\$ in Millions)                                                     |                              |                                                                        |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                      |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                                                       | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                      | 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 |
| Small Tactical Electric<br>Power (STEP)                                                  | MIPR                         | PM E2S2 : Stafford,<br>VA                                              | 0.000          | -       |               | -                                                                                                |               | 0.500           | Feb 2016      | -                                                   |               | 0.500               | Continuing          | Continuing    | Continuing                     |
| Improved Power<br>Distribution Illumination<br>Systems Electrical<br>(IPDISE)/Microgrids | MIPR                         | PM E2S2 : Ft.<br>Belvoir                                               | 0.000          | -       |               | -                                                                                                |               | 1.166           | Feb 2016      | -                                                   |               | 1.166               | Continuing          | Continuing    | Continuing                     |
| Subtotal                                                                                 |                              |                                                                        | 0.000          | -       |               | -                                                                                                |               | 1.666           |               | -                                                   |               | 1.666               | -                   | -             | -                              |
| Product Development (\$ in Millions)                                                     |                              |                                                                        |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                      |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                                                       | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                      | 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 |
| Improved Power<br>Distribution Illumination<br>Systems Electrical<br>(IPDISE)/Microgrids | C/CPFF                       | TBD : TBD                                                              | 0.000          | -       |               | -                                                                                                |               | 0.874           | Jan 2016      | -                                                   |               | 0.874               | Continuing          | Continuing    | Continuing                     |
| Large Advanced Mobile<br>Power Sources (LAMPS)<br>(100-200kW)                            | C/FPIF                       | L-3 Communications,<br>Westwood<br>Corporation, Tulsa,<br>OK : Various | 28.118         | -       |               | -                                                                                                |               | -               |               | -                                                   |               | -                   | Continuing          | Continuing    | Continuing                     |
| Small Tactical Electric<br>Power (STEP)                                                  | C/CPFF                       | TBD : TBD                                                              | 0.000          | -       |               | 1.362                                                                                            |               | 7.322           | Jan 2016      | -                                                   |               | 7.322               | Continuing          | Continuing    | Continuing                     |
| Subtotal                                                                                 |                              |                                                                        | 28.118         | -       |               | 1.362                                                                                            |               | 8.196           |               | -                                                   |               | 8.196               | -                   | -             | -                              |
| Support (\$ in Millions)                                                                 |                              |                                                                        |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                      |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                                                       | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                      | 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 |
| Large Advanced Mobile<br>Power Sources (LAMPS)<br>(100-200kW)                            | MIPR                         | CECOM LCMC :<br>Aberdeen Proving<br>Ground (APG), MD                   | 3.485          | -       |               | -                                                                                                |               | -               |               | -                                                   |               | -                   | Continuing          | Continuing    | Continuing                     |
| Subtotal                                                                                 |                              |                                                                        | 3.485          | -       |               | -                                                                                                |               | -               |               | -                                                   |               | -                   | -                   | -             | -                              |

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|-------------------------------------------------------------------|--|--|--|--|--|-------------------------------------------------------------------------------------------------------------|--|--|--|-------------------------------------------------------------------|--|----------------------------|--|--|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Army |  |  |  |  |  |                                                                                                             |  |  |  |                                                                   |  | <b>Date:</b> February 2015 |  |  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |  |  |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |  | <b>Project (Number/Name)</b><br>194 / <i>Engine Driven Gen Ed</i> |  |                            |  |  |

| <b>Test and Evaluation (\$ in Millions)</b>             |                                           |                                                |                        | <b>FY 2014</b> |                       | <b>FY 2015</b> |                       | <b>FY 2016<br/>Base</b> |                       | <b>FY 2016<br/>OCO</b> |                       | <b>FY 2016<br/>Total</b> |                             |                       |                                         |
|---------------------------------------------------------|-------------------------------------------|------------------------------------------------|------------------------|----------------|-----------------------|----------------|-----------------------|-------------------------|-----------------------|------------------------|-----------------------|--------------------------|-----------------------------|-----------------------|-----------------------------------------|
| <b>Cost Category Item</b>                               | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b>  | <b>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> |
| Large Advanced Mobile Power Sources (LAMPS) (100-200kW) | MIPR                                      | Army Testing & Evaluation Ctr (ATEC) : APG, MD | 0.000                  | 4.858          | Mar 2014              | 4.510          |                       | -                       |                       | -                      |                       | -                        | Continuing                  | Continuing            | Continuing                              |
| <b>Subtotal</b>                                         |                                           |                                                | 0.000                  | 4.858          |                       | 4.510          |                       | -                       |                       | -                      |                       | -                        | -                           | -                     | -                                       |

|                            | <b>Prior<br/>Years</b> | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016<br/>Base</b> | <b>FY 2016<br/>OCO</b> | <b>FY 2016<br/>Total</b> | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
|----------------------------|------------------------|----------------|----------------|-------------------------|------------------------|--------------------------|-----------------------------|-----------------------|-----------------------------------------|
| <b>Project Cost Totals</b> | 31.603                 | 4.858          | 5.872          | 9.862                   | -                      | 9.862                    | -                           | -                     | -                                       |

**Remarks**

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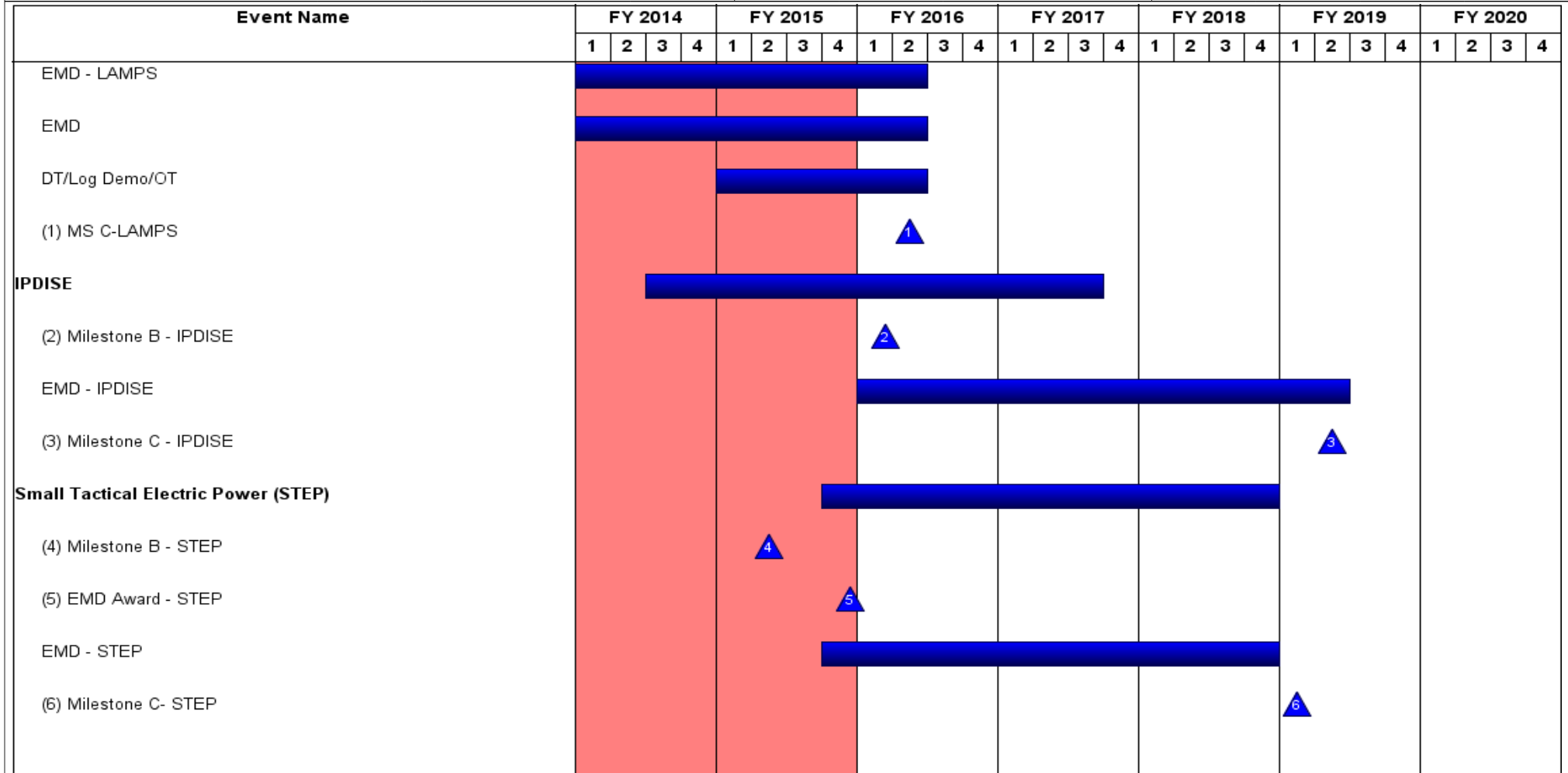
**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army**

**Date:** February 2015

**Appropriation/Budget Activity**  
2040 / 5

**R-1 Program Element (Number/Name)**  
PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*

**Project (Number/Name)**  
194 / *Engine Driven Gen Ed*



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|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                   | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>194 / <i>Engine Driven Gen Ed</i> |                            |

**Schedule Details**

| Events                               | Start   |      | End     |      |
|--------------------------------------|---------|------|---------|------|
|                                      | Quarter | Year | Quarter | Year |
| EMD - LAMPS                          | 2       | 2011 | 2       | 2016 |
| EMD                                  | 1       | 2013 | 2       | 2016 |
| DT/Log Demo/OT                       | 1       | 2015 | 2       | 2016 |
| MS C-LAMPS                           | 2       | 2016 | 2       | 2016 |
| IPDISE                               | 3       | 2014 | 3       | 2017 |
| Milestone B - IPDISE                 | 1       | 2016 | 1       | 2016 |
| EMD - IPDISE                         | 1       | 2016 | 2       | 2019 |
| Milestone C - IPDISE                 | 2       | 2019 | 2       | 2019 |
| Small Tactical Electric Power (STEP) | 4       | 2015 | 4       | 2018 |
| Milestone B - STEP                   | 2       | 2015 | 2       | 2015 |
| EMD Award - STEP                     | 4       | 2015 | 4       | 2015 |
| EMD - STEP                           | 4       | 2015 | 4       | 2018 |
| Milestone C- STEP                    | 1       | 2019 | 1       | 2019 |



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|---------------------------------------------------------|----------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|------------------------------------------------------------------|---------------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5               |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>EC9 / Contingency Basing Infrastructure |                     |                     |               |
| COST (\$ in Millions)                                   | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                          | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| EC9: Contingency Basing<br>Infrastructure               | -              | -       | 0.982   | 2.541           | -                                                                                                | 2.541            | 2.350   | 1.985   | 1.986                                                            | 1.999               | -                   | 11.843        |
| Quantity of RDT&E Articles                              | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                                | -                   |                     |               |

**Note**

FY15 is the first year of funding for this project.

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

This project develops the tools and processes that will optimize recommendations for the materiel used to establish, operate, and maintain contingency bases. The project will increase the available knowledge at the base level and provide an analytical foundation for sound investment decision making. The continuous improvement modeling and simulation analysis tools will match the evolution of threats and technologies. Using a system of systems engineering approach, the Contingency Base Infrastructure Product Directorate's focus ensures optimum integration of materiel across the base camp to facilitate the maximizing of Warfighter effectiveness. CBIs analytical results will allow leadership to make fact based informed decisions on the acquisition and employment/deployment of equipment. This enables contingency bases to be established, operated and managed as a system (system of systems) and the equipment acquired for the base to be compatible and efficient while providing the maximum overall support to the Warfighter. This approach supports Program(s) of Record (PORs) to maximize improvements in Operational Energy and ensures efficiencies across all Areas of Responsibility (AOR).

**B. Accomplishments/Planned Programs (\$ in Millions)**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|
| <b>Title:</b> Contingency Base Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                     | -              | 0.982          | -              |
| <b>Description:</b> Funding is provided for the following effort.                                                                                                                                                                                                                                                                                                                                                                                                 |                |                |                |
| <b>FY 2015 Plans:</b><br>Continue integration of Model-Based Systems Engineering principles to enable analysis of contingency bases as a system (system of systems). Continuation of development of the Base Camp Master Planning Tool - Contingency Base Interface to the Warfighter (CBIWar). Support Army investment decisions across the Contingency Base Infrastructure portfolio and development of Capability Sets and their associated delivery strategy. |                |                |                |
| <b>Title:</b> Toolset Development                                                                                                                                                                                                                                                                                                                                                                                                                                 | -              | -              | 0.481          |
| <b>Description:</b> Funding is provided for the following effort.                                                                                                                                                                                                                                                                                                                                                                                                 |                |                |                |
| <b>FY 2016 Plans:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                             | <b>Date:</b> February 2015                                                     |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>EC9 / <i>Contingency Basing Infrastructure</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                             | <b>FY 2014</b>                                                                 | <b>FY 2015</b> |
| Continue model based systems engineering tool maturation of multiple analytical tools, Base Camp Master Planning Tool – Contingency Base Interface to the Warfighter (CBIWar) , and an Integrated - Preliminary Design Review (I-PDR).                                                                                                                                                                                                                                                     |                                                                                                             |                                                                                |                |
| <b>Title:</b> Integrated Analysis and Design<br><b>Description:</b> Funding is provided for the following effort.<br><br><b>FY 2016 Plans:</b><br>Funding is planned to support Integrated Toolset Demonstration 2 that will support portfolio maturation, integration and analytical evaluation. And also support Army investment decisions across the Contingency Base Infrastructure portfolio.                                                                                         |                                                                                                             | -                                                                              | 0.972          |
| <b>Title:</b> Capabilities Implementation and Materiel Requirements<br><b>Description:</b> Funding is provided for the following effort.<br><br><b>FY 2016 Plans:</b><br>Funding is planned to support the development of the design of different sized contingency base camps, capability sets, expansion and enhancements sets, and establishment of a configuration management plan to manage the base camp capability sets.                                                            |                                                                                                             | -                                                                              | 0.421          |
| <b>Title:</b> Program Management<br><b>Description:</b> Funding is provided for the following effort.<br><br><b>FY 2016 Plans:</b><br>Oversight and management of integrated analysis and design, capabilities implementation and materiel requirements, and toolset development. Funding to support managing cost, schedule, performance, risk, personnel, and operational activities. Also oversight, analysis and management of operational energy related impacts and technology gaps. |                                                                                                             | -                                                                              | 0.667          |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                             | -                                                                              | 2.541          |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                             |                                                                                |                |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                             |                                                                                |                |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                             |                                                                                |                |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                             |                                                                                |                |
| Not applicable for this item.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                             |                                                                                |                |

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|---------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |                                                                                                  | Date: February 2015                                              |
| Appropriation/Budget Activity<br>2040 / 5               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>EC9 / Contingency Basing Infrastructure |
| E. Performance Metrics<br>N/A                           |                                                                                                  |                                                                  |

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|                                                                   |                                   |                                           |                    |                |                   |                                                                                                             |                   |                     |                   |                    |                   |                                                                                |                         |                   |                                 |
|-------------------------------------------------------------------|-----------------------------------|-------------------------------------------|--------------------|----------------|-------------------|-------------------------------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|--------------------------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b> |                                   |                                           |                    |                |                   |                                                                                                             |                   |                     |                   |                    |                   | <b>Date: February 2015</b>                                                     |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                                   |                                           |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>EC9 / <i>Contingency Basing Infrastructure</i> |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                       |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                           |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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 Management                                                | Various                           | PM Force Projection : Warren, MI          | 0.000              | -              |                   | 0.315                                                                                                       | Feb 2015          | 0.667               | Feb 2016          | -                  |                   | 0.667                                                                          | -                       | 0.982             | -                               |
| <b>Subtotal</b>                                                   |                                   |                                           | 0.000              | -              |                   | 0.315                                                                                                       |                   | 0.667               |                   | -                  |                   | 0.667                                                                          | -                       | 0.982             | -                               |
| <b>Product Development (\$ in Millions)</b>                       |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                           |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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> |
| Toolset Development                                               | Various                           | Various : Various                         | 0.000              | -              |                   | 0.292                                                                                                       | Feb 2015          | 0.481               | Feb 2016          | -                  |                   | 0.481                                                                          | -                       | 0.773             | Continuing                      |
| Integrated Analysis and Design                                    | Various                           | Various : Various                         | 0.000              | -              |                   | 0.200                                                                                                       | Feb 2015          | 0.972               | Feb 2016          | -                  |                   | 0.972                                                                          | -                       | 1.172             | Continuing                      |
| Capabilities Implementation and Materiel Requirements             | Various                           | Various : Various                         | 0.000              | -              |                   | 0.175                                                                                                       | Feb 2015          | 0.421               | Feb 2016          | -                  |                   | 0.421                                                                          | -                       | 0.596             | Continuing                      |
| <b>Subtotal</b>                                                   |                                   |                                           | 0.000              | -              |                   | 0.667                                                                                                       |                   | 1.874               |                   | -                  |                   | 1.874                                                                          | -                       | 2.541             | -                               |
|                                                                   |                                   |                                           | <b>Prior Years</b> | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                        |                                   |                                           | 0.000              | -              |                   | 0.982                                                                                                       |                   | 2.541               |                   | -                  |                   | 2.541                                                                          | -                       | 3.523             | -                               |
| <b>Remarks</b>                                                    |                                   |                                           |                    |                |                   |                                                                                                             |                   |                     |                   |                    |                   |                                                                                |                         |                   |                                 |

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army** **Date:** February 2015

|                                                  |                                                                                                             |                                                                                |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>EC9 / <i>Contingency Basing Infrastructure</i> |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|

| Event Name                                            | FY 2014                                               |   |   |   | FY 2015                                |   |   |   | FY 2016                                 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------|-------------------------------------------------------|---|---|---|----------------------------------------|---|---|---|-----------------------------------------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                                                       | 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 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Toolset Development                                   | <div><div>1</div><div>I-SRR</div></div>               |   |   |   | Toolset Development                    |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (1) Integrated System Requirements Review (I-SRR)     |                                                       |   |   |   |                                        |   |   |   | <div><div>2</div><div>I-PDR</div></div> |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (2) Integrated Preliminary Design Review (I-PDR)      |                                                       |   |   |   |                                        |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (3) Integrated Critical Design Review (I-CDR)         |                                                       |   |   |   |                                        |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Integrated Analysis and Design                        | <div><div>4</div><div>ITD</div></div>                 |   |   |   | Integrated Analysis and Design         |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (4) Integrated Tool Demonstration (ITD)               |                                                       |   |   |   | <div><div>5</div><div>ITD2</div></div> |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (5) Integrated Tool Demonstration 2 (ITD2)            |                                                       |   |   |   |                                        |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (6) Developmental Toolset Demonstration (DTD)         |                                                       |   |   |   |                                        |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (7) Operational Toolset Demonstration (OTD)           |                                                       |   |   |   |                                        |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capabilities Implementation and Materiel Requirements | Capabilities Implementation and Materiel Requirements |   |   |   |                                        |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Management                                    | Program Management                                    |   |   |   |                                        |   |   |   |                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                                | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>EC9 / <i>Contingency Basing Infrastructure</i> |                            |

**Schedule Details**

| <b>Events</b>                                         | <b>Start</b>   |             | <b>End</b>     |             |
|-------------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                       | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| Toolset Development                                   | 1              | 2015        | 4              | 2020        |
| Integrated System Requirements Review (I-SRR)         | 3              | 2014        | 3              | 2014        |
| Integrated Preliminary Design Review (I-PDR)          | 1              | 2016        | 1              | 2016        |
| Integrated Critical Design Review (I-CDR)             | 1              | 2017        | 1              | 2017        |
| Integrated Analysis and Design                        | 1              | 2015        | 4              | 2020        |
| Integrated Tool Demonstration (ITD)                   | 4              | 2014        | 4              | 2014        |
| Integrated Tool Demonstration 2 (ITD2)                | 2              | 2016        | 2              | 2016        |
| Developmental Toolset Demonstration (DTD)             | 2              | 2017        | 2              | 2017        |
| Operational Toolset Demonstration (OTD)               | 4              | 2017        | 4              | 2017        |
| Capabilities Implementation and Materiel Requirements | 1              | 2015        | 4              | 2020        |
| Program Management                                    | 1              | 2015        | 4              | 2020        |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |         |         |                 |                                                                                                  |                  |         |         | Date: February 2015                                                        |         |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>EJ9 / Maneuver Support Vessel (Light)<br>(MSV(L)) |         |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                                    | FY 2020 | Cost To<br>Complete | Total<br>Cost |
| EJ9: Maneuver Support Vessel<br>(Light) (MSV(L))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -              | -       | -       | 10.066          | -                                                                                                | 10.066           | 18.586  | 14.522  | -                                                                          | -       | -                   | 43.174        |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                                          | -       |                     |               |
| Note<br>The Maneuver Support Vessel (Light) (MSV(L)) is a new start program in FY16. APE 0603804, Project 526 provided resourcing for FY15 research and development support to this program".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |         |                 |                                                                                                  |                  |         |         |                                                                            |         |                     |               |
| A. Mission Description and Budget Item Justification<br>FY16 dollars in the amount of \$10.066M support the initiation of the Engineering, Manufacturing, Development (EMD) phase for the Maneuver Support Vessel (Light)(MSV(L)). The MSV(L) is a non-developmental item (NDI) modified, multifunctional waterborne mobility platform, which will displace the current Landing Craft Mechanized-8 (LCM-8) with much greater payload and speed while being capable of operating in shallower water (improved draft), and also provide roll through capability via stern and bow ramps. The MSV(L) will provide a waterborne corridor for movement and maneuver; expeditionary delivery of combat configured equipment, troops, and logistics, in austere anti-access/area denial environments; and operational capability from ship to shore and along coastal waters, narrow inland water ways and rivers. It will be capable of transporting multiple combat configured ready-to-fight payloads with crew (i.e. an Abrams tank; two Strykers with bar armor; four Joint Light Tactical Vehicles (JLTVs) w/trailers; or a Heavy Expandable Mobility Tactical Truck (HEMTT) Load Handling System (LHS) and trailer). It will be able to operate fully loaded at a speed of 18 knots in Sea State 3 (SS3) conditions, while being survivable (seaworthy) in SS7 conditions. It will be furnished with a subsurface surveillance device, protection from small arms fire, and two Common Remotely Operated Weapon Stations (CROWS II) for vessel defense and force protection, and mitigate detection thorough reduction of thermal and acoustic signature. It will move combat configured forces and supplies more efficiently than the vessel it displaces. |                |         |         |                 |                                                                                                  |                  |         |         |                                                                            |         |                     |               |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                                                    | FY 2015 | FY 2016             |               |
| Title: Systems Engineering / Program Management<br>Description: Salaries for Core and Matrix personnel,includes SSEB.<br>FY 2016 Plans:<br>Program support for core and matrix personnel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |         |         |                 |                                                                                                  |                  |         |         | -                                                                          | -       | 2.811               |               |
| Title: Government Furnished Equipment (GFE)<br>Description: GFE for prototype vessel consist of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR); and Remote Weapon Stations (RWS)<br>FY 2016 Plans:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |         |         |                 |                                                                                                  |                  |         |         | -                                                                          | -       | 1.122               |               |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                         |                |                |                         |                                                                                                             |                          |                |                | <b>Date:</b> February 2015                                                            |                |                             |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                           |                |                |                         | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                          |                |                | <b>Project (Number/Name)</b><br>EJ9 / <i>Maneuver Support Vessel (Light) (MSV(L))</i> |                |                             |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                |                |                |                         |                                                                                                             |                          |                |                | <b>FY 2014</b>                                                                        | <b>FY 2015</b> | <b>FY 2016</b>              |                   |
| GFE for prototype vessel consist of C4ISR and RWS                                                                                                                                                                                                                                                                                                                          |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| <b>Title:</b> Engineering and Manufacturing Development (EMD)<br><b>Description:</b> EMD contract                                                                                                                                                                                                                                                                          |                |                |                         |                                                                                                             |                          |                |                | -                                                                                     | -              | 5.008                       |                   |
| <b>FY 2016 Plans:</b><br>EMD contract                                                                                                                                                                                                                                                                                                                                      |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| <b>Title:</b> Test<br><b>Description:</b> Modeling & Simulation; and Scale modeling testing                                                                                                                                                                                                                                                                                |                |                |                         |                                                                                                             |                          |                |                | -                                                                                     | -              | 1.125                       |                   |
| <b>FY 2016 Plans:</b><br>Modeling & Simulation; and Scale modeling testing                                                                                                                                                                                                                                                                                                 |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                          |                |                |                         |                                                                                                             |                          |                |                | -                                                                                     | -              | 10.066                      |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                   |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                                                                           | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016<br/>Base</b> | <b>FY 2016<br/>OCO</b>                                                                                      | <b>FY 2016<br/>Total</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b>                                                                        | <b>FY 2020</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • 643804526 Logistics and Engineer Eq: 643804 526<br><i>Logistics and Engineer Adv Dev</i>                                                                                                                                                                                                                                                                                 | 2.748          | 2.602          | 2.546                   | -                                                                                                           | 2.546                    | 4.221          | 4.389          | 3.478                                                                                 | 3.501          | -                           | 23.485            |
| • SSN R03050: MSV Support Vessel (Light) MSV-L SSN R03050                                                                                                                                                                                                                                                                                                                  | -              | -              | -                       | -                                                                                                           | -                        | -              | -              | 80.701                                                                                | 82.234         | Continuing                  | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                             |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                             |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| Full and open competition, down select from paper design proposals to one contractor to build and test one prototype, and inform the Capability Production Document (CPD) development during the Engineering, Manufacturing, Development (EMD) Phase. Acquisition Strategy is to award one 10 year contract; 5 years EMD and LRIP Phase with 5 years Full Rate Production. |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                              |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |
| N/A                                                                                                                                                                                                                                                                                                                                                                        |                |                |                         |                                                                                                             |                          |                |                |                                                                                       |                |                             |                   |



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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army |                              |                                         |                |         |               |                                                                                                  |               |                 |               |                                                                            |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5              |                              |                                         |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>EJ9 / Maneuver Support Vessel (Light)<br>(MSV(L)) |               |                     |                     |               |                                |
| Product Development (\$ in Millions)                   |                              |                                         |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                             |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location       | 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 |
| Government Furnished<br>Equipment (GFE)                | MIPR                         | TBD : TBD                               | 0.000          | -       |               | -                                                                                                |               | 1.122           | Nov 2015      | -                                                                          |               | 1.122               | -                   | 1.122         | -                              |
| Engineering and<br>Manufacturing<br>Development (EMD)  | C/FP                         | TBD : TBD                               | 0.000          | -       |               | -                                                                                                |               | 5.008           | Mar 2016      | -                                                                          |               | 5.008               | -                   | 5.008         | -                              |
| Subtotal                                               |                              |                                         | 0.000          | -       |               | -                                                                                                |               | 6.130           |               | -                                                                          |               | 6.130               | -                   | 6.130         | -                              |
| Support (\$ in Millions)                               |                              |                                         |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                             |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location       | 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 |
| Salaries for Core and<br>Matrix Personnel              | MIPR                         | Various : Various                       | 0.000          | -       |               | -                                                                                                |               | 2.811           | Oct 2015      | -                                                                          |               | 2.811               | Continuing          | Continuing    | -                              |
| Subtotal                                               |                              |                                         | 0.000          | -       |               | -                                                                                                |               | 2.811           |               | -                                                                          |               | 2.811               | -                   | -             | -                              |
| Test and Evaluation (\$ in Millions)                   |                              |                                         |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                             |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location       | 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 |
| Testing Modeling &<br>Simulation and Scale<br>Modeling | MIPR                         | NAVSEA Carderock :<br>West Bethesda, MD | 0.000          | -       |               | -                                                                                                |               | 1.125           | Mar 2016      | -                                                                          |               | 1.125               | -                   | 1.125         | -                              |
| Subtotal                                               |                              |                                         | 0.000          | -       |               | -                                                                                                |               | 1.125           |               | -                                                                          |               | 1.125               | -                   | 1.125         | -                              |
|                                                        |                              |                                         | Prior<br>Years | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                             |               | FY 2016<br>Total    | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Project Cost Totals                                    |                              |                                         | 0.000          | -       |               | -                                                                                                |               | 10.066          |               | -                                                                          |               | 10.066              | -                   | -             | -                              |
| Remarks                                                |                              |                                         |                |         |               |                                                                                                  |               |                 |               |                                                                            |               |                     |                     |               |                                |

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|---------------------------------------------------|---------|---|---|---|---------|---|---|---|------------------|--------------------------------------------------------------------------------------------------|---|---|------------------|---|---|---|------------------|---------------------|---|----------------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army |         |   |   |   |         |   |   |   |                  |                                                                                                  |   |   |                  |   |   |   |                  | Date: February 2015 |   |                                                                            |         |   |   |   |         |   |   |   |
| Appropriation/Budget Activity<br>2040 / 5         |         |   |   |   |         |   |   |   |                  | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |   |   |                  |   |   |   |                  |                     |   | Project (Number/Name)<br>EJ9 / Maneuver Support Vessel (Light)<br>(MSV(L)) |         |   |   |   |         |   |   |   |
| Event Name                                        | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016          |                                                                                                  |   |   | FY 2017          |   |   |   | FY 2018          |                     |   |                                                                            | FY 2019 |   |   |   | FY 2020 |   |   |   |
|                                                   | 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 |
| Salaries for Core and Matrix Support              |         |   |   |   |         |   |   |   | ████████████████ |                                                                                                  |   |   | ████████████████ |   |   |   | ████████████████ |                     |   |                                                                            |         |   |   |   |         |   |   |   |
| ████████████████                                  |         |   |   |   |         |   |   |   | ████████████████ |                                                                                                  |   |   | ████████████████ |   |   |   |                  |                     |   |                                                                            |         |   |   |   |         |   |   |   |
| ████████████████                                  |         |   |   |   |         |   |   |   | ████████████████ |                                                                                                  |   |   | ████████████████ |   |   |   |                  |                     |   |                                                                            |         |   |   |   |         |   |   |   |
| ████████████████                                  |         |   |   |   |         |   |   |   | ████████████████ |                                                                                                  |   |   | ████████████████ |   |   |   |                  |                     |   |                                                                            |         |   |   |   |         |   |   |   |
| Engineering and Manufacturing Development         |         |   |   |   |         |   |   |   | ████████████████ |                                                                                                  |   |   | ████████████████ |   |   |   | ████████████████ |                     |   |                                                                            |         |   |   |   |         |   |   |   |
| Government Furnished Equipment                    |         |   |   |   |         |   |   |   | ████████████████ |                                                                                                  |   |   | ████████████████ |   |   |   | ████████████████ |                     |   |                                                                            |         |   |   |   |         |   |   |   |
| Test Modeling & Simulation and Scale Modeling     |         |   |   |   |         |   |   |   | ████████████████ |                                                                                                  |   |   | ████████████████ |   |   |   | ████████████████ |                     |   |                                                                            |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                                       | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>EJ9 / <i>Maneuver Support Vessel (Light) (MSV(L))</i> |                            |

Schedule Details

| Events                                        | Start   |      | End     |      |
|-----------------------------------------------|---------|------|---------|------|
|                                               | Quarter | Year | Quarter | Year |
| Salaries for Core and Matrix Support          | 1       | 2016 | 4       | 2018 |
| Engineering and Manufacturing Development     | 2       | 2016 | 4       | 2018 |
| Government Furnished Equipment                | 1       | 2016 | 4       | 2016 |
| Test Modeling & Simulation and Scale Modeling | 2       | 2016 | 4       | 2018 |

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|------------------------------------------------------|---------------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |         |         |                 |                                                                                                  |                  |         |         |                                                      | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>H01 / Combat Engineer Eq Ed |                     |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                              | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| H01: Combat Engineer Eq Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -              | 2.099   | 1.038   | 1.139           | -                                                                                                | 1.139            | 2.503   | 3.928   | 3.600                                                | -                   | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                    | -                   |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |
| This project supports the Engineering Manufacturing Development (EMD) 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 EMD 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                              | FY 2015             | FY 2016             |               |
| Title: Drive Assist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         | 0.250                                                | 0.239               | 0.150               |               |
| Description: Integrate and demonstrate COTS technologies enhancing CE operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |
| FY 2014 Accomplishments:<br>Development of Robotics Research                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |
| FY 2015 Plans:<br>Focus on the inclusion of referenced technologies for integration on a 120M Grader. Technology will primarily be COTS equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |
| FY 2016 Plans:<br>Focus additional reuse of technology from the 120M Grader effort applied to the FOD..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |
| Title: CE Simulators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         | 0.300                                                | -                   | -                   |               |
| Description: Labor, software, and hardware simulator development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |
| FY 2014 Accomplishments:<br>Labor, software, and hardware simulator development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |
| Title: Market Research/R&D Engineering Support                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |         |                 |                                                                                                  |                  |         |         | 0.150                                                | -                   | -                   |               |
| Description: Market Research Survey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         |                                                      |                     |                     |               |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                      |                                                                                                             | <b>Date:</b> February 2015                                         |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                        | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>H01 / <i>Combat Engineer Eq Ed</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                             |                                                                                                             | <b>FY 2014</b>                                                     | <b>FY 2015</b> |
| <b>FY 2014 Accomplishments:</b><br>Conduct market research and documentation preparation for all types of construction equipment.                                                                                                                                       |                                                                                                             |                                                                    |                |
| <b>Title:</b> Operational Efficiency<br><b>Description:</b> Improve Operational Efficiency/Reduce Maintenance Time                                                                                                                                                      |                                                                                                             | -                                                                  | 0.400          |
| <b>FY 2015 Plans:</b><br>Using Government supplied vehicles (GFE), evaluate new technologies to be developed by private industry to improve the efficiency or reduce maintenance burden.                                                                                |                                                                                                             |                                                                    |                |
| <b>Title:</b> Operational Energy/Duty Cycle<br><b>Description:</b> Operational Energy/Duty Cycle Monitoring                                                                                                                                                             |                                                                                                             | 1.058                                                              | -              |
| <b>FY 2014 Accomplishments:</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.                                  |                                                                                                             |                                                                    |                |
| <b>Title:</b> System Engineering/Program Management<br><b>Description:</b> Program Management                                                                                                                                                                           |                                                                                                             | 0.341                                                              | 0.399          |
| <b>FY 2014 Accomplishments:</b><br>Program Management Support of R&D Program for CE                                                                                                                                                                                     |                                                                                                             |                                                                    |                |
| <b>FY 2015 Plans:</b><br>Program Management Support of R&D Program for CE                                                                                                                                                                                               |                                                                                                             |                                                                    |                |
| <b>FY 2016 Plans:</b><br>Program Management Support of R&D Program for CE                                                                                                                                                                                               |                                                                                                             |                                                                    |                |
| <b>Title:</b> Work Tool Enhancement<br><b>Description:</b> Develop prototype systems to provide additional machine capability. This may include sweepers, buckets, lift devices, fork enhancements, etc.                                                                |                                                                                                             | -                                                                  | -              |
| <b>FY 2016 Plans:</b><br>Investigate the availability and commercial capability of the Family of Skid Steer Loaders (CASE M400 series). These attachments include Rock drill, Angle Boom, Roto Tiller, Vibratory Roller, Snow Blower, Dozer Blade, Sand Bagger, Backhoe |                                                                                                             |                                                                    | 0.170          |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|-----------------|-----------------------------------------------------------------------------------------------|------------------|---------|---------|------------------------------------------------------|---------------------|---------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                       |         |         |                 |                                                                                               |                  |         |         |                                                      | Date: February 2015 |                     |            |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                     |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>H01 / Combat Engineer Eq Ed |                     |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                          |         |         |                 |                                                                                               |                  |         |         |                                                      | FY 2014             | FY 2015             | FY 2016    |
| and Bridge Handling Equipment. Specific focus will be on attachments which improve the capability to improve the Rapid Airfield Repair (Vibratory Roller, Roto-tiller, Back-hoe). The Effort may include purchase/lease of hardware and demonstration of capacities which will enhance Rapid Airfield Repair. |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| Title: Machine Product Improvement                                                                                                                                                                                                                                                                            |         |         |                 |                                                                                               |                  |         |         |                                                      | -                   | -                   | 0.200      |
| Description: Investigate technologies to enhance performance/safety of current systems. Examples of this may include track slip detection on the DEUCE, whole vehicle protection, SLEP technology insertion.                                                                                                  |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| FY 2016 Plans:<br>Utilizing the list of vehicles entering the SLEP process, engage the user community to determine what product improvements are available to improve performance/component life. Specifically focusing on the DEUCE track slip detection/mitigation.                                         |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| Title: Forced Entry (Airborne/Air Assault) Study/Development                                                                                                                                                                                                                                                  |         |         |                 |                                                                                               |                  |         |         |                                                      | -                   | -                   | 0.200      |
| Description: Explore options of using Program of Record systems to meet Forced Entry requirements.                                                                                                                                                                                                            |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| FY 2016 Plans:<br>Investigate the possibility of adapting the BHL for the Air Assault role. Also, research possible material solutions for the ERACC IV capability.                                                                                                                                           |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                    |         |         |                 |                                                                                               |                  |         |         |                                                      | 2.099               | 1.038               | 1.139      |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                             |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| Line Item                                                                                                                                                                                                                                                                                                     | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                              | FY 2020             | Cost To<br>Complete | Total Cost |
| • High Mobility Engineer Excavator                                                                                                                                                                                                                                                                            | 21.465  | -       | 2.656           | -                                                                                             | 2.656            | 1.771   | -       | -                                                    | -                   | -                   | 25.892     |
| l: High Mobility Engineer Excavator l                                                                                                                                                                                                                                                                         |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| • Grader, Mtzd, Hvy:                                                                                                                                                                                                                                                                                          | 2.000   | 5.827   | 5.903           | -                                                                                             | 5.903            | 1.770   | -       | -                                                    | -                   | -                   | 15.500     |
| Grader, Mtzd, Hvy                                                                                                                                                                                                                                                                                             |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| • Hydraulic Excavator:                                                                                                                                                                                                                                                                                        | 17.001  | 4.938   | -               | -                                                                                             | -                | -       | -       | -                                                    | -                   | -                   | 21.939     |
| Hydraulic Excavator                                                                                                                                                                                                                                                                                           |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| • Plant, Asphalt Mixing:                                                                                                                                                                                                                                                                                      | -       | 0.667   | 0.984           | -                                                                                             | 0.984            | -       | -       | -                                                    | -                   | -                   | 1.651      |
| Plant, Asphalt Mixing                                                                                                                                                                                                                                                                                         |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |
| • Tractor Full Tracked, Med T-9:                                                                                                                                                                                                                                                                              | 28.828  | 34.071  | 27.156          | -                                                                                             | 27.156           | -       | -       | -                                                    | -                   | -                   | 90.055     |
| Tractor Full Tracked, Med T-9                                                                                                                                                                                                                                                                                 |         |         |                 |                                                                                               |                  |         |         |                                                      |                     |                     |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                           |                |                |                |                                                                                                             |                |                |                |                                                                    |                | <b>Date:</b> February 2015 |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                             |                |                |                | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                |                |                | <b>Project (Number/Name)</b><br>H01 / <i>Combat Engineer Eq Ed</i> |                |                            |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                     |                |                |                |                                                                                                             |                |                |                |                                                                    |                |                            |                   |
|                                                                                                                                                                                                                                                                                                                                                                              |                |                | <b>FY 2016</b> | <b>FY 2016</b>                                                                                              | <b>FY 2016</b> |                |                |                                                                    |                | <b>Cost To</b>             |                   |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                                                                             | <b>FY 2014</b> | <b>FY 2015</b> | <b>Base</b>    | <b>OCO</b>                                                                                                  | <b>Total</b>   | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b>                                                     | <b>FY 2020</b> | <b>Complete</b>            | <b>Total Cost</b> |
| • All Terrain Cranes:<br><i>All Terrain Cranes</i>                                                                                                                                                                                                                                                                                                                           | 2.613          | 4.938          | 16.750         | -                                                                                                           | 16.750         | 66.349         | 10.771         | 17.789                                                             | 42.306         | Continuing                 | Continuing        |
| • Scraper, Earthmoving:<br><i>Scraper, Earthmoving</i>                                                                                                                                                                                                                                                                                                                       | 36.078         | 14.926         | 26.125         | -                                                                                                           | 26.125         | 16.661         | 28.948         | -                                                                  | -              | -                          | 122.738           |
| • ERACC 4: <i>ERACC IV</i>                                                                                                                                                                                                                                                                                                                                                   | -              | 2.741          | 2.531          | -                                                                                                           | 2.531          | -              | -              | -                                                                  | -              | -                          | 5.272             |
| • ERACC 1: <i>ERACC I SSA</i>                                                                                                                                                                                                                                                                                                                                                | -              | 2.378          | -              | -                                                                                                           | -              | -              | -              | -                                                                  | -              | -                          | 2.378             |
| • ERACC 2: <i>ERACC 2 EE</i>                                                                                                                                                                                                                                                                                                                                                 | 5.000          | 8.365          | -              | -                                                                                                           | -              | -              | -              | -                                                                  | -              | -                          | 13.365            |
| • ERACC 3: <i>ERACC III METL</i>                                                                                                                                                                                                                                                                                                                                             | -              | 1.440          | -              | -                                                                                                           | -              | -              | -              | -                                                                  | -              | -                          | 1.440             |
| • Const Equip ESP: <i>SLEP</i>                                                                                                                                                                                                                                                                                                                                               | 16.088         | 15.933         | 19.640         | -                                                                                                           | 19.640         | 31.695         | 31.426         | 41.537                                                             | 41.805         | Continuing                 | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                               |                |                |                |                                                                                                             |                |                |                |                                                                    |                |                            |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                               |                |                |                |                                                                                                             |                |                |                |                                                                    |                |                            |                   |
| 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. |                |                |                |                                                                                                             |                |                |                |                                                                    |                |                            |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                                |                |                |                |                                                                                                             |                |                |                |                                                                    |                |                            |                   |
| N/A                                                                                                                                                                                                                                                                                                                                                                          |                |                |                |                                                                                                             |                |                |                |                                                                    |                |                            |                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b>                      |                                   |                                           |                    |                |                   |                                                                                                      |                   |                     |                   |                    |                   | <b>Date: February 2015</b>                                  |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                       |                                   |                                           |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>H01 / Combat Engineer Eq Ed |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                            |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                                              | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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+STIR                                                                              | TBD                               | TACOM : Warren, Michigan                  | 0.167              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                           | -                       | 0.167             | -                               |
| <b>Subtotal</b>                                                                        |                                   |                                           | 0.167              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                           | -                       | 0.167             | -                               |
| <b>Product Development (\$ in Millions)</b>                                            |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                                              | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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 Pre-Award requirements, KPP, selection criteria development, Testing of systems | Various                           | TACOM & TARDEC : Warren, MI               | 1.675              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                           | -                       | 1.675             | -                               |
| Development of Drive Assist for Combat Engineer                                        | Various                           | TBD : TBD                                 | 1.933              | 0.250          | Mar 2014          | 0.239                                                                                                |                   | 0.150               | Mar 2016          | -                  |                   | 0.150                                                       | -                       | 2.572             | Continuing                      |
| Design armor kits for Combat Engineer                                                  | Various                           | TARDEC : Warren, MI                       | 5.995              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                           | -                       | 5.995             | Continuing                      |
| Development of Simulator                                                               | Various                           | PEO Stricom : PEO, Stricom, Orlando, FL   | 8.683              | 0.300          | Apr 2014          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                           | -                       | 8.983             | Continuing                      |
| Hazard Clearance at Speed                                                              | TBD                               | TARDEC : Warren, Michigan                 | 0.001              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                           | -                       | 0.001             | -                               |
| Forced Entry: (Airborne/ Air Assault) Study/ Development                               | TBD                               | TARDEC : Warren, MI                       | 9.256              | -              |                   | -                                                                                                    |                   | 0.200               | Mar 2016          | -                  |                   | 0.200                                                       | -                       | 9.456             | Continuing                      |
| Market Research                                                                        | TBD                               | TARDEC : Warren, Michigan                 | 0.040              | 0.149          | Mar 2014          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                           | -                       | 0.189             | -                               |
| Work Tool Enhancement                                                                  | Various                           | Various : Various                         | 0.000              | -              |                   | -                                                                                                    |                   | 0.170               | Mar 2016          | -                  |                   | 0.170                                                       | -                       | 0.170             | -                               |
| Machine Product Improvement                                                            | TBD                               | Caterpillar : Illinois                    | 0.000              | -              |                   | -                                                                                                    |                   | 0.200               | Jun 2016          | -                  |                   | 0.200                                                       | -                       | 0.200             | -                               |
| <b>Subtotal</b>                                                                        |                                   |                                           | 27.583             | 0.699          |                   | 0.239                                                                                                |                   | 0.720               |                   | -                  |                   | 0.720                                                       | -                       | 29.241            | -                               |



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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army |                              |                                                           |                |         |               |                                                                                                  |               |                 |               |                                                      |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5              |                              |                                                           |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>H01 / Combat Engineer Eq Ed |               |                     |                     |               |                                |
| Support (\$ in Millions)                               |                              |                                                           |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                       |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                         | 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 |
| System Engineering/<br>Program Management              | MIPR                         | TARDEC/TACOM :<br>Warren, Michigan                        | 0.503          | 0.413   | Dec 2013      | 0.399                                                                                            | Dec 2014      | 0.419           | Dec 2015      | -                                                    |               | 0.419               | -                   | 1.734         | -                              |
| Subtotal                                               |                              |                                                           | 0.503          | 0.413   |               | 0.399                                                                                            |               | 0.419           |               | -                                                    |               | 0.419               | -                   | 1.734         | -                              |
| Test and Evaluation (\$ in Millions)                   |                              |                                                           |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                       |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                         | 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 |
| Operational Efficiency                                 | MIPR                         | TARDEC, Warren,<br>Michigan : TARDEC,<br>Warren, Michigan | 0.022          | -       |               | 0.400                                                                                            |               | -               |               | -                                                    |               | -                   | -                   | 0.422         | -                              |
| Operational Energy/Duty<br>Cycle Monitoring            | MIPR                         | TARDEC & ATC :<br>Warren, Michigan                        | 0.000          | 0.987   | Jun 2014      | -                                                                                                |               | -               |               | -                                                    |               | -                   | -                   | 0.987         | -                              |
| Non Nuclear Soil Density<br>Set Testing                | TBD                          | TARDEC : Warren,<br>MI                                    | 0.050          | -       |               | -                                                                                                |               | -               |               | -                                                    |               | -                   | -                   | 0.050         | -                              |
| Subtotal                                               |                              |                                                           | 0.072          | 0.987   |               | 0.400                                                                                            |               | -               |               | -                                                    |               | -                   | -                   | 1.459         | -                              |
|                                                        |                              |                                                           | Prior<br>Years | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                       |               | FY 2016<br>Total    | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Project Cost Totals                                    |                              |                                                           | 28.325         | 2.099   |               | 1.038                                                                                            |               | 1.139           |               | -                                                    |               | 1.139               | -                   | 32.601        | -                              |
| Remarks                                                |                              |                                                           |                |         |               |                                                                                                  |               |                 |               |                                                      |               |                     |                     |               |                                |

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| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army                  |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   | Date: February 2015 |                             |   |   |         |   |   |   |         |   |   |   |
|--------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|----------------------------------------------------------|---|---|---------|---|---|---|---------------------|-----------------------------|---|---|---------|---|---|---|---------|---|---|---|
| Appropriation/Budget Activity                                      |         |   |   |   |         |   |   |   |         | R-1 Program Element (Number/Name)                        |   |   |         |   |   |   |                     | Project (Number/Name)       |   |   |         |   |   |   |         |   |   |   |
| 2040 / 5                                                           |         |   |   |   |         |   |   |   |         | PE 0604804A / Logistics and Engineer Equipment - Eng Dev |   |   |         |   |   |   |                     | H01 / Combat Engineer Eq Ed |   |   |         |   |   |   |         |   |   |   |
| Event Name                                                         | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |                                                          |   |   | FY 2017 |   |   |   | FY 2018             |                             |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |
|                                                                    | 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 |
| Drive Assist                                                       |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Simulator Development for Construction Equipment                   |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Force Entry: HMEE Type II, Grader, ERACC & Loader Type I Study/Dev |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Market Research                                                    |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| System Engineer/Program Support                                    |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Operational Efficiency                                             |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Operational Energy/Duty Cycle Monitoring                           |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Mine Clearing Armor Protection                                     |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Work Tool Enhancement                                              |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |
| Machine Product improvement                                        |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |   |                     |                             |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                    | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>H01 / <i>Combat Engineer Eq Ed</i> |                            |

**Schedule Details**

| <b>Events</b>                                                              | <b>Start</b>   |             | <b>End</b>     |             |
|----------------------------------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                                            | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| Drive Assist                                                               | 1              | 2012        | 4              | 2021        |
| Simulator Development for Construction Equipment                           | 1              | 2012        | 4              | 2014        |
| Force Entry: HMEE Type II, Grader, ERACC & Loader Type I Study/Development | 1              | 2012        | 4              | 2017        |
| Market Research                                                            | 1              | 2013        | 4              | 2014        |
| System Engineer/Program Support                                            | 1              | 2013        | 4              | 2021        |
| Operational Efficiency                                                     | 1              | 2013        | 4              | 2021        |
| Operational Energy/Duty Cycle Monitoring                                   | 1              | 2013        | 4              | 2015        |
| Mine Clearing Armor Protection                                             | 1              | 2019        | 4              | 2021        |
| Work Tool Enhancement                                                      | 2              | 2016        | 4              | 2016        |
| Machine Product improvement                                                | 3              | 2016        | 4              | 2021        |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>H02 / Tactical Bridging - Engineering<br>Development |                     |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                                       | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| H02: Tactical Bridging -<br>Engineering Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -              | 23.552  | 6.988   | 11.619          | -                                                                                                | 11.619           | 6.699   | 2.207   | 7.338                                                                         | 5.956               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                                             | -                   |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| This project supports the engineering and manufacturing development and transition to procurement of Future Force Bridge Systems and support equipment. Funding supports the Engineering and Manufacturing Development phases of the Joint Assault Bridge (JAB) and Line of Communication Bridge (LOCB). This project also funds efforts to upgrade and modernize the bridging fleet through the development of new systems (Bridge Supplemental Set, Structural Health Monitoring, Stryker Launched Assault Bridge) and enhancement of existing systems (weight class upgrades/up-ratings). |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                                                       | FY 2015             | FY 2016             |               |
| Title: Joint Assault Bridge (JAB) Development and Testing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |         |         |                 |                                                                                                  |                  |         |         | 10.627                                                                        | 0.900               | 5.600               |               |
| Description: JAB Development and Testing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| FY 2014 Accomplishments:<br>Developmental Testing of the JAB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| FY 2015 Plans:<br>JAB Testing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| FY 2016 Plans:<br>Operational Testing and Live Fire Testing of the JAB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| Title: Rapidly Emplaced Bridge System (REBS) Auto Launch-Retrieve with the Common Bridge Transporter (CBT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |         |                 |                                                                                                  |                  |         |         | 1.500                                                                         | -                   | 0.500               |               |
| Description: Development, integration, and testing of REBS Auto Launch-Retrieve with the CBT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| FY 2014 Accomplishments:<br>Completion of the development and integration of the REBS Auto Launch-Retrieve capability with the CBT                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| FY 2016 Plans:<br>Testing of the REBS Auto Launch-Retrieve capability with the CBT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |
| Title: Line of Communication Bridge (LOCB) Development and Testing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         | 10.500                                                                        | 5.892               | 4.000               |               |
| Description: Prototype development and developmental and operational testing of the LOCB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |         |         |                 |                                                                                                  |                  |         |         |                                                                               |                     |                     |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                          |                                                                                                  | Date: February 2015                                                           |         |         |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                        | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>H02 / Tactical Bridging - Engineering<br>Development |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                             |                                                                                                  | FY 2014                                                                       | FY 2015 | FY 2016 |
| FY 2014 Accomplishments:<br>LOCB Development and Testing                                                                                                                                                                                                                                                                                                                         |                                                                                                  |                                                                               |         |         |
| FY 2015 Plans:<br>Continuation of testing of the LOCB System                                                                                                                                                                                                                                                                                                                     |                                                                                                  |                                                                               |         |         |
| FY 2016 Plans:<br>Completion of testing of the LOCB System                                                                                                                                                                                                                                                                                                                       |                                                                                                  |                                                                               |         |         |
| Title: Structural Health Monitoring System                                                                                                                                                                                                                                                                                                                                       |                                                                                                  | 0.750                                                                         | 0.150   | 0.250   |
| Description: Develop and integrate a passive method to collect mobile military bridge system usage and health data and provide that information back to the user for informed decision making. System is targeted for use on the JAB, REBS, Dry Support Bridge (DSB), and LOCB and will reduce the requirement for in-field inspections.                                         |                                                                                                  |                                                                               |         |         |
| FY 2014 Accomplishments:<br>Development of the Structural Health Monitoring system                                                                                                                                                                                                                                                                                               |                                                                                                  |                                                                               |         |         |
| FY 2015 Plans:<br>Continued development of the Structural Health Monitoring system                                                                                                                                                                                                                                                                                               |                                                                                                  |                                                                               |         |         |
| FY 2016 Plans:<br>Continued development and testing of the Structural Health Monitoring system                                                                                                                                                                                                                                                                                   |                                                                                                  |                                                                               |         |         |
| Title: Bridge Supplemental Set (BSS)                                                                                                                                                                                                                                                                                                                                             |                                                                                                  | 0.175                                                                         | 0.046   | -       |
| Description: Develop a multi-functional, consolidated engineering set consisting of an anchorage system, access/egress traction improvement matting, power generation, tools, and a float bridge protection device. The BSS is targeted for use with multiple tactical bridging systems to include the LOCB, IRB, and the DSB. It will also increase the capability of the MRBC. |                                                                                                  |                                                                               |         |         |
| FY 2014 Accomplishments:<br>BSS Development                                                                                                                                                                                                                                                                                                                                      |                                                                                                  |                                                                               |         |         |
| FY 2015 Plans:<br>Continuation of BSS Development                                                                                                                                                                                                                                                                                                                                |                                                                                                  |                                                                               |         |         |
| Title: Bridging Weight Classification Upgrades                                                                                                                                                                                                                                                                                                                                   |                                                                                                  | -                                                                             | -       | 1.269   |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|-------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|------------------------------------------------------------------------------------------|----------------|-----------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                 |                |                |                |                                                                                                             |                |                |                | <b>Date:</b> February 2015                                                               |                |                 |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                   |                |                |                | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                |                |                | <b>Project (Number/Name)</b><br>H02 / <i>Tactical Bridging - Engineering Development</i> |                |                 |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                        |                |                |                |                                                                                                             |                |                |                | <b>FY 2014</b>                                                                           | <b>FY 2015</b> | <b>FY 2016</b>  |                   |
| <b>Description:</b> Investigate, analyze, and test solutions to increase the weight class (Military Load Classification or MLC) of existing bridges to support the future, heavier, force. Developing solutions using existing bridges will eliminate the need to procure new bridges to support the future force. |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |
| <b>FY 2016 Plans:</b><br>Begin investigation of solutions to increase the MLC of the Armored Vehicle Launch Bridge (AVLB)                                                                                                                                                                                          |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                  |                |                |                |                                                                                                             |                |                |                | 23.552                                                                                   | 6.988          | 11.619          |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                           |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |
|                                                                                                                                                                                                                                                                                                                    |                |                | <b>FY 2016</b> | <b>FY 2016</b>                                                                                              | <b>FY 2016</b> |                |                |                                                                                          |                | <b>Cost To</b>  |                   |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                   | <b>FY 2014</b> | <b>FY 2015</b> | <b>Base</b>    | <b>OCO</b>                                                                                                  | <b>Total</b>   | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b>                                                                           | <b>FY 2020</b> | <b>Complete</b> | <b>Total Cost</b> |
| • OPA-3, MX0100: <i>OPA3, MX0100</i>                                                                                                                                                                                                                                                                               | 8.188          | -              | 9.822          | -                                                                                                           | 9.822          | 11.773         | 16.610         | 20.876                                                                                   | 25.043         | Continuing      | Continuing        |
| • OPA-3, G06520: <i>OPA-3, G06520</i>                                                                                                                                                                                                                                                                              | -              | -              | 4.959          | -                                                                                                           | 4.959          | 3.965          | 4.956          | 3.965                                                                                    | -              | -               | 17.845            |
| • OPA-3, MA4504: <i>OPA-3, MA4504</i>                                                                                                                                                                                                                                                                              | 10.442         | 7.358          | 7.000          | -                                                                                                           | 7.000          | 8.866          | 8.244          | 3.920                                                                                    | 3.965          | Continuing      | Continuing        |
| • WTCV, GZ3001: <i>WTCV, GZ3001</i>                                                                                                                                                                                                                                                                                | 2.002          | 39.362         | 33.455         | -                                                                                                           | 33.455         | 85.478         | 119.040        | 168.281                                                                                  | 188.193        | Continuing      | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                     |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                     |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |
| RDT&E efforts to support testing and follow-on production.                                                                                                                                                                                                                                                         |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                      |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |
| N/A                                                                                                                                                                                                                                                                                                                |                |                |                |                                                                                                             |                |                |                |                                                                                          |                |                 |                   |

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|-------------------------------------------------------------------|-----------------------------------|---------------------------------------------|--------------------|----------------|-------------------|-------------------------------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|------------------------------------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b> |                                   |                                             |                    |                |                   |                                                                                                             |                   |                     |                   |                    |                   | <b>Date: February 2015</b>                                                               |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                                   |                                             |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>H02 / <i>Tactical Bridging - Engineering Development</i> |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                       |                                   |                                             |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>   | <b>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              | 2.987          | Mar 2014          | 1.523                                                                                                       |                   | 1.000               | Apr 2016          | -                  |                   | 1.000                                                                                    | Continuing              | Continuing        | -                               |
| <b>Subtotal</b>                                                   |                                   |                                             | 0.000              | 2.987          |                   | 1.523                                                                                                       |                   | 1.000               |                   | -                  |                   | 1.000                                                                                    | -                       | -                 | -                               |
| <b>Product Development (\$ in Millions)</b>                       |                                   |                                             |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>   | <b>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 | 50.652             | -              |                   | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                                        | Continuing              | Continuing        | Continuing                      |
| LOCB Development                                                  | MIPR                              | Rock Island Arsenal (RIA) : Rock Island, IL | 11.010             | 6.485          | Mar 2014          | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                                        | Continuing              | Continuing        | Continuing                      |
| Bridge Supplemental Set                                           | MIPR                              | TBD : TBD                                   | 0.000              | 0.050          | Jun 2014          | 0.050                                                                                                       | May 2015          | -                   |                   | -                  |                   | -                                                                                        | -                       | 0.100             | -                               |
| Structural Health Monitoring                                      | MIPR                              | TARDEC : Warren, MI                         | 0.000              | 0.750          | Jun 2014          | 0.100                                                                                                       | May 2015          | 0.150               | Apr 2016          | -                  |                   | 0.150                                                                                    | -                       | 1.000             | -                               |
| REBS Auto Launch-Retrieve                                         | SS/FFP                            | TBD : TBS                                   | 0.000              | 1.500          | Aug 2014          | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                                        | -                       | 1.500             | -                               |
| Bridging Weight Classification Upgrades                           | TBD                               | TBD : TBD                                   | 0.000              | -              |                   | -                                                                                                           |                   | 0.519               | Apr 2016          | -                  |                   | 0.519                                                                                    | -                       | 0.519             | -                               |
| <b>Subtotal</b>                                                   |                                   |                                             | 61.662             | 8.785          |                   | 0.150                                                                                                       |                   | 0.669               |                   | -                  |                   | 0.669                                                                                    | -                       | -                 | -                               |
| <b>Support (\$ in Millions)</b>                                   |                                   |                                             |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>   | <b>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> |
| Government In-House                                               | MIPR                              | TACOM : Warren, MI                          | 8.100              | -              |                   | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                                        | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                   |                                   |                                             | 8.100              | -              |                   | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                                        | -                       | -                 | -                               |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Army |  |  |  |  |  |                                                                                                             |  |  |  |                                                                                          |  | <b>Date:</b> February 2015 |  |  |  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |  |  |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |  | <b>Project (Number/Name)</b><br>H02 / <i>Tactical Bridging - Engineering Development</i> |  |                            |  |  |  |

| <b>Test and Evaluation (\$ in Millions)</b> |                                           |                                                   |                        | <b>FY 2014</b> |                       | <b>FY 2015</b> |                       | <b>FY 2016<br/>Base</b> |                       | <b>FY 2016<br/>OCO</b> |                       | <b>FY 2016<br/>Total</b> |                             |                       |                                         |
|---------------------------------------------|-------------------------------------------|---------------------------------------------------|------------------------|----------------|-----------------------|----------------|-----------------------|-------------------------|-----------------------|------------------------|-----------------------|--------------------------|-----------------------------|-----------------------|-----------------------------------------|
| <b>Cost Category Item</b>                   | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b>     | <b>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> |
| JAB Testing                                 | MIPR                                      | Aberdeen Proving Grounds (APG) :<br>APG, Maryland | 2.541                  | 9.780          | Feb 2014              | 0.900          |                       | 5.550                   | Apr 2016              | -                      |                       | 5.550                    | Continuing                  | Continuing            | Continuing                              |
| REBS Testing (Auto Launch-Retrieve)         | MIPR                                      | Aberdeen Proving Grounds (APG) :<br>APG, MD       | 1.100                  | -              |                       | -              |                       | 0.400                   | Apr 2016              | -                      |                       | 0.400                    | -                           | 1.500                 | -                                       |
| LOCB Testing                                | MIPR                                      | ATEC : Aberdeen,<br>MD                            | 4.800                  | 2.000          | May 2014              | 4.415          | May 2015              | 4.000                   | Apr 2016              | -                      |                       | 4.000                    | -                           | 15.215                | -                                       |
| <b>Subtotal</b>                             |                                           |                                                   | 8.441                  | 11.780         |                       | 5.315          |                       | 9.950                   |                       | -                      |                       | 9.950                    | -                           | -                     | -                                       |

|                            | <b>Prior<br/>Years</b> | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016<br/>Base</b> | <b>FY 2016<br/>OCO</b> | <b>FY 2016<br/>Total</b> | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
|----------------------------|------------------------|----------------|----------------|-------------------------|------------------------|--------------------------|-----------------------------|-----------------------|-----------------------------------------|
| <b>Project Cost Totals</b> | 78.203                 | 23.552         | 6.988          | 11.619                  | -                      | 11.619                   | -                           | -                     | -                                       |

**Remarks**



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army**

Date: February 2015

**Appropriation/Budget Activity**

2040 / 5

[illegible]

PE 0604804A / Logistics and Engineer

*Equipment - Eng Dev*

| Project (Number/Name) | Start Date | End Date   | Status      | Manager      | Budget (USD) | Actual Cost (USD) | Progress (%) | Risk Level | Notes                                |
|-----------------------|------------|------------|-------------|--------------|--------------|-------------------|--------------|------------|--------------------------------------|
| 101                   | 2023-01-15 | 2023-03-31 | Completed   | John Doe     | 150000       | 148000            | 100          | Low        | Project completed ahead of schedule. |
| 102                   | 2023-02-01 | 2023-05-15 | In Progress | Jane Smith   | 220000       | 180000            | 85           | Medium     | Minor delays in procurement.         |
| 103                   | 2023-03-10 | 2023-06-30 | On Hold     | Mike Johnson | 90000        | 0                 | 0            | High       | Waiting for client approval.         |
| 104                   | 2023-04-01 | 2023-07-31 | Planned     | Sarah Lee    | 300000       | 0                 | 0            | Medium     | Initial planning phase.              |
| 105                   | 2023-05-01 | 2023-08-31 | On Hold     | David Kim    | 180000       | 0                 | 0            | Low        | Resource allocation pending.         |
| 106                   | 2023-06-01 | 2023-09-30 | Planned     | Emily White  | 250000       | 0                 | 0            | Medium     | Scope definition in progress.        |
| 107                   | 2023-07-01 | 2023-10-31 | Planned     | Chris Brown  | 120000       | 0                 | 0            | Low        | Vendor selection underway.           |
| 108                   | 2023-08-01 | 2023-11-30 | Planned     | Alex Green   | 170000       | 0                 | 0            | Medium     | Feasibility study ongoing.           |
| 109                   | 2023-09-01 | 2023-12-31 | Planned     | Nina Black   | 200000       | 0                 | 0            | Low        | Initial meeting scheduled.           |
| 110                   | 2023-10-01 | 2024-01-31 | Planned     | Kevin Gray   | 160000       | 0                 | 0            | Medium     | Requirement gathering.               |

H02 / Tactical Bridging - Engineering

Development

| Event Name                              | FY 2014                                       |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |
|-----------------------------------------|-----------------------------------------------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                         | 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 |
| JAB Development and Testing             | [Gantt bar spanning FY 2014 Q1 to FY 2018 Q4] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| LOCB Development and Testing            | [Gantt bar spanning FY 2014 Q2 to FY 2017 Q1] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| REBS Auto Launch-Retrieve               | [Gantt bar spanning FY 2014 Q2 to FY 2017 Q1] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Bridge Supplemental Set                 | [Gantt bar spanning FY 2014 Q3 to FY 2017 Q1] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Structural Health Monitoring Project    | [Gantt bar spanning FY 2014 Q3 to FY 2017 Q1] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Bridging Weight Classification Upgrades | [Gantt bar spanning FY 2016 Q3 to FY 2018 Q4] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                                          | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>H02 / <i>Tactical Bridging - Engineering Development</i> |                            |

Schedule Details

| Events                                  | Start   |      | End     |      |
|-----------------------------------------|---------|------|---------|------|
|                                         | Quarter | Year | Quarter | Year |
| JAB Development and Testing             | 2       | 2012 | 4       | 2018 |
| LOCB Development and Testing            | 2       | 2012 | 4       | 2016 |
| REBS Auto Launch-Retrieve               | 3       | 2012 | 4       | 2016 |
| Bridge Supplemental Set                 | 2       | 2014 | 4       | 2016 |
| Structural Health Monitoring Project    | 2       | 2014 | 4       | 2016 |
| Bridging Weight Classification Upgrades | 3       | 2016 | 4       | 2018 |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|------------------------------------------------------------------|---------------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>H14 / Materials Handling Equipment - Ed |                     |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                          | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| H14: Materials Handling<br>Equipment - Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -              | 0.288   | 0.283   | 0.628           | -                                                                                                | 0.628            | 1.166   | 0.751   | 0.630                                                            | 0.641               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                                | -                   |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| This project supports engineering, manufacturing, and development 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                                          | FY 2015             | FY 2016             |               |
| Title: Material Handling Equipment (MHE) System Improvement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 |                                                                                                  |                  |         |         | 0.155                                                            | 0.207               | -                   |               |
| Description: System Improvements for Light Capability Rough Terrain Forklift (LCRTF) for Tactical Operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| FY 2014 Accomplishments:<br>Integrate and test add-on hardware for reliable cold starting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| FY 2015 Plans:<br>Investigate lightweight armor solution for LCRTF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| Title: Material Handling Equipment (MHE) Armor Kits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |         |         |                 |                                                                                                  |                  |         |         | 0.133                                                            | -                   | -                   |               |
| Description: Lightweight Armor for All Terrain Lifter Army System (ATLAS) II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| FY 2014 Accomplishments:<br>Conduct evaluation of armor solution at test-site for both performance and survivability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| Title: Investigate high-speed towing for LCRTF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |         |         |                 |                                                                                                  |                  |         |         | -                                                                | 0.076               | -                   |               |
| Description: Investigate high-speed towing for LCRTF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| FY 2015 Plans:<br>LCRTF high-speed towing development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |         |         |                 |                                                                                                  |                  |         |         |                                                                  |                     |                     |               |
| Title: Platform Safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |         |         |                 |                                                                                                  |                  |         |         | -                                                                | -                   | 0.330               |               |

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------|----------------|----------------|--------------------------------------------------------------------------------|----------------|-----------------------------------|-------------------|----------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                | <b>Date:</b> February 2015        |                   |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |                               | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                                |                |                | <b>Project (Number/Name)</b><br>H14 / <i>Materials Handling Equipment - Ed</i> |                |                                   |                   |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                |                                   |                   |                |
| <b>Description:</b> Research and Demonstrate technologies which would enhance and improve the safe operation of Material Handling Equipment to include sensors and cameras.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                | <b>FY 2014</b>                    | <b>FY 2015</b>    | <b>FY 2016</b> |
| <b>FY 2016 Plans:</b><br>Integrate technologies onto a Rough Terrain Container Handler (RTCH) which would help the driver be aware of obstacles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                |                                   |                   |                |
| <b>Title:</b> Work Tool Enhancement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                | -                                 | -                 | 0.298          |
| <b>Description:</b> Develop prototype systems to provide additional machine capability. This may include sweepers, buckets, lift devices, fork enhancements, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                |                                   |                   |                |
| <b>FY 2016 Plans:</b><br>Finalize the instructions and documentation for the ATLAS 8 foot Fork and Light Capacity Rough Terrain Forklift (LCRTF) Vertical Lift Attachment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                |                                   |                   |                |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                | 0.288                             | 0.283             | 0.628          |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                |                                   |                   |                |
| <u>Line Item</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <u>FY 2014</u> | <u>FY 2015</u> | <u>FY 2016</u><br><u>Base</u> | <u>FY 2016</u><br><u>OCO</u>                                                                                | <u>FY 2016</u><br><u>Total</u> | <u>FY 2017</u> | <u>FY 2018</u> | <u>FY 2019</u>                                                                 | <u>FY 2020</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |                |
| • OPA M41200: <i>Rough Terrain Container Handler</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.250          | -              | -                             | -                                                                                                           | -                              | -              | -              | -                                                                              | -              | -                                 | 1.250             |                |
| • OPA M41800: <i>All Terrain Lifting Army System</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.500          | -              | -                             | -                                                                                                           | -                              | -              | -              | -                                                                              | -              | -                                 | 2.500             |                |
| • OPA G41002: <i>Light Capacity Rough Terrain (LCRT) Forklift</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 7.517          | 14.327         | 27.982                        | -                                                                                                           | 27.982                         | 17.843         | 18.199         | 18.555                                                                         | 17.916         | 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. Develop additional capabilities for existing systems such as the LCRTF, RTCH and ATLAS. Award contracts with vehicle or attachment/technology OEMs to integrate existing commercial attachments/technologies onto the platforms to improve operator function and system usefulness. Testing will be conducted at Aberdeen Proving Grounds, MD. |                |                |                               |                                                                                                             |                                |                |                |                                                                                |                |                                   |                   |                |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |                                                                                                  | Date: February 2015                                              |
| Appropriation/Budget Activity<br>2040 / 5               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>H14 / Materials Handling Equipment - Ed |
| E. Performance Metrics<br>N/A                           |                                                                                                  |                                                                  |

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|--------------------------------------------------------|------------------------------|-----------------------------------|----------------|---------|---------------|--------------------------------------------------------------------------------------------------|---------------|-----------------|---------------|------------------------------------------------------------------|---------------|---------------------|---------------------|---------------|--------------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army |                              |                                   |                |         |               |                                                                                                  |               |                 |               |                                                                  |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5              |                              |                                   |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>H14 / Materials Handling Equipment - Ed |               |                     |                     |               |                                |
| Management Services (\$ in Millions)                   |                              |                                   |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                   |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | 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 |
| SBIR + STTR                                            | TBD                          | TBD : TBD                         | 0.032          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | -                   | 0.032         | -                              |
| Subtotal                                               |                              |                                   | 0.032          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | -                   | 0.032         | -                              |
| Product Development (\$ in Millions)                   |                              |                                   |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                   |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | 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 |
| MHE Training Aids                                      | SS/FFP                       | Kalmar Rt : Cibolo, TX            | 2.555          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | Continuing          | Continuing    | Continuing                     |
| System Improvements for LCRTF for Tactical Operations  | Various                      | TARDEC : Warren, MI               | 0.200          | -       |               | 0.207                                                                                            |               | -               |               | -                                                                |               | -                   | -                   | 0.407         | -                              |
| Lightweight Armor for ATLAS II                         | MIPR                         | TARDEC : Warren, MI               | 0.350          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | -                   | 0.350         | -                              |
| Sling Load Attachment for RTCH                         | C/FFP                        | Kalmar RT Center : Cibolo, TX     | 0.100          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | -                   | 0.100         | -                              |
| Platform Safety                                        | SS/FFP                       | Contract : Texas                  | 0.000          | -       |               | -                                                                                                |               | 0.330           | Mar 2016      | -                                                                |               | 0.330               | -                   | 0.330         | -                              |
| Work Tool Enhancement                                  | SS/FFP                       | TACOM : Michigan                  | 0.000          | -       |               | -                                                                                                |               | 0.298           | Mar 2016      | -                                                                |               | 0.298               | -                   | 0.298         | -                              |
| Subtotal                                               |                              |                                   | 3.205          | -       |               | 0.207                                                                                            |               | 0.628           |               | -                                                                |               | 0.628               | -                   | -             | -                              |
| Support (\$ in Millions)                               |                              |                                   |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                   |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | 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 |
| System Improvements for LCRTF for Tactical Operations  | MIPR                         | TARDEC : Warren, MI               | 0.055          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | -                   | 0.055         | -                              |
| Lightweight Armor for ATLAS II                         | MIPR                         | TARDEC : Warren, MI               | 0.110          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | -                   | 0.110         | -                              |
| Subtotal                                               |                              |                                   | 0.165          | -       |               | -                                                                                                |               | -               |               | -                                                                |               | -                   | -                   | 0.165         | -                              |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Army |  |  |  |  |  |                                                                                                      |  |  |  |  |  | <b>Date:</b> February 2015                                              |  |  |  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |  |  |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |  |  |  |  |  | <b>Project (Number/Name)</b><br>H14 / Materials Handling Equipment - Ed |  |  |  |

| <b>Test and Evaluation (\$ in Millions)</b>           |                                           |                                               |                        | <b>FY 2014</b> |                       | <b>FY 2015</b> |                       | <b>FY 2016<br/>Base</b> |                       | <b>FY 2016<br/>OCO</b> |                       | <b>FY 2016<br/>Total</b> |                             |                       |                                         |
|-------------------------------------------------------|-------------------------------------------|-----------------------------------------------|------------------------|----------------|-----------------------|----------------|-----------------------|-------------------------|-----------------------|------------------------|-----------------------|--------------------------|-----------------------------|-----------------------|-----------------------------------------|
| <b>Cost Category Item</b>                             | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b> | <b>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> |
| Lightweight Armor for ATLAS II                        | TBD                                       | TBD : TBD                                     | 0.000                  | 0.133          | Jan 2014              | -              |                       | -                       |                       | -                      |                       | -                        | -                           | 0.133                 | -                                       |
| System Improvements for LCRTF for Tactical Operations | TBD                                       | TBD : TBD                                     | 0.250                  | 0.155          |                       | -              |                       | -                       |                       | -                      |                       | -                        | -                           | 0.405                 | -                                       |
| Investigate high speed towing for LCRTF               | TBD                                       | TBD : TBD                                     | 0.000                  | -              |                       | 0.076          |                       | -                       |                       | -                      |                       | -                        | -                           | 0.076                 | -                                       |
| <b>Subtotal</b>                                       |                                           |                                               | 0.250                  | 0.288          |                       | 0.076          |                       | -                       |                       | -                      |                       | -                        | -                           | 0.614                 | -                                       |

|                            | <b>Prior<br/>Years</b> | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016<br/>Base</b> | <b>FY 2016<br/>OCO</b> | <b>FY 2016<br/>Total</b> | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
|----------------------------|------------------------|----------------|----------------|-------------------------|------------------------|--------------------------|-----------------------------|-----------------------|-----------------------------------------|
| <b>Project Cost Totals</b> | 3.652                  | 0.288          | 0.283          | 0.628                   | -                      | 0.628                    | -                           | -                     | -                                       |

**Remarks**

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|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|----------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--------------------------------------------------------------------------------------------------|---|---|---|---------|---|---|---|---------|---|------------------------------------------------------------------|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army              |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   | Date: February 2015                                              |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Appropriation/Budget Activity<br>2040 / 5                      |  |  |  |  |  |  |  |  |  | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |   |   |   |         |   |   |   |         |   | Project (Number/Name)<br>H14 / Materials Handling Equipment - Ed |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Event Name                                                     |  |  |  |  |  |  |  |  |  | FY 2014                                                                                          |   |   |   | FY 2015 |   |   |   | FY 2016 |   |                                                                  |   | FY 2017 |   |   |   | FY 2018 |   |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  | 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 |
| Design and test LCRTF air drop configuration package           |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Integrate and test LCRTF cold weather start kit                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Investigate alternative armor solution for ATLAS II            |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct evaluation of armor solution at test-site for ATLAS II |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| LCRTF Lightweight armor development                            |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| LCRTF high speed towing development                            |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Platform Safety                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Work Tool Enhancement                                          |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| MHE System Replacement Market Survey                           |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Investigate MHE Attachments                                    |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |   |   |         |   |                                                                  |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |



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|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                                | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>H14 / <i>Materials Handling Equipment - Ed</i> |                            |

**Schedule Details**

| <b>Events</b>                                                  | <b>Start</b>   |             | <b>End</b>     |             |
|----------------------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                                | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| Design and test LCRTF air drop configuration package           | 3              | 2013        | 4              | 2019        |
| Integrate and test LCRTF cold weather start kit                | 1              | 2014        | 4              | 2019        |
| Investigate alternative armor solution for ATLAS II            | 1              | 2013        | 3              | 2014        |
| Conduct evaluation of armor solution at test-site for ATLAS II | 3              | 2014        | 4              | 2014        |
| LCRTF Lightweight armor development                            | 3              | 2015        | 4              | 2018        |
| LCRTF high speed towing development                            | 2              | 2015        | 4              | 2019        |
| Platform Safety                                                | 2              | 2016        | 3              | 2017        |
| Work Tool Enhancement                                          | 2              | 2016        | 2              | 2017        |
| MHE System Replacement Market Survey                           | 1              | 2017        | 4              | 2021        |
| Investigate MHE Attachments                                    | 1              | 2019        | 4              | 2021        |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         |                                                             |                     |                     |               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|-------------------------------------------------------------|---------------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |         |                 |                                                                                                  |                  |         |         |                                                             | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>L39 / Field Sustainment Support Ed |                     |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                     | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| L39: Field Sustainment Support Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -              | 1.729   | 1.687   | 1.849           | -                                                                                                | 1.849            | 4.156   | 3.219   | 2.308                                                       | 3.078               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                           | -                   |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |         |         |                 |                                                                                                  |                  |         |         |                                                             |                     |                     |               |
| This project supports the Engineering and Manufacturing Development (EMD) of critical capabilities for cargo aerial delivery for 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. 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                                     | FY 2015             | FY 2016             |               |
| Title: Advanced Low Velocity Airdrop System (ALVADS) - Light and Heavy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 |                                                                                                  |                  |         |         | 1.489                                                       | 1.687               | 1.849               |               |
| Description: ALVADS - Light and Heavy are capable of airdrop operations at an altitude down to 750-ft Above Ground Level (AGL) for ALVADS-L and 975-ft AGL for ALVADS-H, while retaining the objective altitude of 500-ft AGL for both 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 |                                                                                                  |                  |         |         |                                                             |                     |                     |               |
| FY 2014 Accomplishments:<br>Transitioned ALVADS program into Engineering and Manufacturing Development (EMD) and continued Design Validation (DV) testing on military aircraft at Yuma Proving Ground.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 |                                                                                                  |                  |         |         |                                                             |                     |                     |               |
| FY 2015 Plans:<br>Complete DV. Down select to technically mature ALVADS assets for Developmental Testing (DT). Initiate DT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         |                                                             |                     |                     |               |
| FY 2016 Plans:<br>Conduct and complete DT and initiate Operational Testing (OT).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |         |         |                 |                                                                                                  |                  |         |         |                                                             |                     |                     |               |
| Title: Low Cost Aerial Delivery System (LCADS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |         |         |                 |                                                                                                  |                  |         |         | 0.240                                                       | -                   | -                   |               |
| 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 US Air Force Aircraft (USAF A/C) and aerial port handling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         |                                                             |                     |                     |               |

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|--------------------------------------------------------------------|--|--|--|-------------------------------------------------------------------------------------------------------------|--|--|--|---------------------------------------------------------------------------|--|--|--|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army |  |  |  |                                                                                                             |  |  |  | <b>Date:</b> February 2015                                                |  |  |  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |  | <b>Project (Number/Name)</b><br>L39 / <i>Field Sustainment Support Ed</i> |  |  |  |

|                                                                                                                                                                 |  |  |  |                |                |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------|----------------|----------------|
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                     |  |  |  | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016</b> |
| equipment. LCADS is a proven means to execute critical resupply missions without having to place soldiers and ground vehicle convoys on the road.               |  |  |  |                |                |                |
| <b><i>FY 2014 Accomplishments:</i></b><br>Completed Preplanned Product Improvement (P3I) testing. Low Cost Low Altitude/High Velocity (LCLA/HV) flight testing. |  |  |  |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                               |  |  |  | 1.729          | 1.687          | 1.849          |

|                                                               |                |                |                               |                              |                                |                |                |                |                |                                   |                   |
|---------------------------------------------------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| <b>C. Other Program Funding Summary (\$ in Millions)</b>      |                |                |                               |                              |                                |                |                |                |                |                                   |                   |
|                                                               | <u>FY 2014</u> | <u>FY 2015</u> | <u>FY 2016</u><br><u>Base</u> | <u>FY 2016</u><br><u>OCO</u> | <u>FY 2016</u><br><u>Total</u> | <u>FY 2017</u> | <u>FY 2018</u> | <u>FY 2019</u> | <u>FY 2020</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
| • MA7806: <i>Precision Airdrop, OPA 3, MA7806</i>             | 9.500          | 4.778          | 2.890                         | -                            | 2.890                          | 1.930          | 2.191          | 2.197          | 2.240          | Continuing                        | Continuing        |
| • 643804 K39: <i>Field Sustainment Support AD, 643804 K39</i> | 2.088          | 0.534          | 1.875                         | -                            | 1.875                          | 2.856          | 2.453          | 2.531          | 1.886          | Continuing                        | Continuing        |

**Remarks**

**D. Acquisition Strategy**  
Accelerate product development and testing to transition into production.

**E. Performance Metrics**  
N/A

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|                                                        |                              |                                               |                |         |               |                                                                                                  |               |                 |               |                                                             |               |                     |                     |               |                                |
|--------------------------------------------------------|------------------------------|-----------------------------------------------|----------------|---------|---------------|--------------------------------------------------------------------------------------------------|---------------|-----------------|---------------|-------------------------------------------------------------|---------------|---------------------|---------------------|---------------|--------------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army |                              |                                               |                |         |               |                                                                                                  |               |                 |               |                                                             |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5              |                              |                                               |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>L39 / Field Sustainment Support Ed |               |                     |                     |               |                                |
| Management Services (\$ in Millions)                   |                              |                                               |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                              |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location             | 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 |
| Project Management<br>Support                          | Various                      | PM FSS, Natick :<br>Natick, MA                | 2.810          | 0.757   | Mar 2014      | 0.382                                                                                            |               | 0.400           |               | -                                                           |               | 0.400               | -                   | 4.349         | Continuing                     |
| SBIR+STTR                                              | TBD                          | Various : Various                             | 0.129          | -       |               | -                                                                                                |               | -               |               | -                                                           |               | -                   | -                   | 0.129         | -                              |
| Subtotal                                               |                              |                                               | 2.939          | 0.757   |               | 0.382                                                                                            |               | 0.400           |               | -                                                           |               | 0.400               | -                   | 4.478         | -                              |
| Product Development (\$ in Millions)                   |                              |                                               |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                              |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location             | 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 |
| ACPRS                                                  | Various                      | PM FSS, Natick :<br>Various                   | 3.943          | -       |               | -                                                                                                |               | -               |               | -                                                           |               | -                   | -                   | 3.943         | -                              |
| ALVADS-L&H                                             | Various                      | Various : Various                             | 14.216         | 0.389   | Jul 2014      | 0.505                                                                                            |               | 0.600           |               | -                                                           |               | 0.600               | -                   | 15.710        | Continuing                     |
| JPADS P3I                                              | Various                      | Various : Various                             | 5.870          | -       |               | -                                                                                                |               | -               |               | -                                                           |               | -                   | -                   | 5.870         | Continuing                     |
| LCADS P3I efforts                                      | Various                      | Various : Various                             | 0.966          | -       |               | -                                                                                                |               | -               |               | -                                                           |               | -                   | -                   | 0.966         | Continuing                     |
| EHLSCDS                                                | Various                      | Various : Various                             | 0.000          | -       |               | -                                                                                                |               | 0.100           |               | -                                                           |               | 0.100               | -                   | 0.100         | -                              |
| Subtotal                                               |                              |                                               | 24.995         | 0.389   |               | 0.505                                                                                            |               | 0.700           |               | -                                                           |               | 0.700               | -                   | 26.589        | -                              |
| Test and Evaluation (\$ in Millions)                   |                              |                                               |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                              |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location             | 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 |
| LCADS                                                  | Various                      | Yuma Proving<br>Ground (YPG), AZ,<br>AEC : AZ | 9.897          | 0.183   | Mar 2014      | -                                                                                                |               | -               |               | -                                                           |               | -                   | -                   | 10.080        | Continuing                     |
| JPADS P3I                                              | Various                      | Yuma Proving<br>Ground, AZ : Yuma,<br>AZ      | 0.951          | -       |               | -                                                                                                |               | -               |               | -                                                           |               | -                   | -                   | 0.951         | -                              |
| JPADS 10K OT                                           | Various                      | GSA : GSA                                     | 0.936          | -       |               | -                                                                                                |               | -               |               | -                                                           |               | -                   | -                   | 0.936         | Continuing                     |
| ALVADS-L&H                                             | Various                      | YPG, AZ/ OTC, NC :<br>YPG, AZ/ OTC, NC        | 4.136          | 0.400   | Jul 2014      | 0.800                                                                                            |               | 0.749           |               | -                                                           |               | 0.749               | -                   | 6.085         | Continuing                     |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Army |  |  |  |  |  |                                                                                                             |  |  |  |                                                                           |  | <b>Date:</b> February 2015 |  |  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |  |  |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |  | <b>Project (Number/Name)</b><br>L39 / <i>Field Sustainment Support Ed</i> |  |                            |  |  |

| Test and Evaluation (\$ in Millions) |                              |                                   |                | FY 2014 |               | FY 2015 |               | FY 2016<br>Base |               | FY 2016<br>OCO |               | FY 2016<br>Total |                     |               |                                |
|--------------------------------------|------------------------------|-----------------------------------|----------------|---------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|---------------|--------------------------------|
| Cost Category Item                   | Contract<br>Method<br>& Type | Performing<br>Activity & Location | 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 |
| <b>Subtotal</b>                      |                              |                                   | 15.920         | 0.583   |               | 0.800   |               | 0.749           |               | -              |               | 0.749            | -                   | 18.052        | -                              |

|                            | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO | FY 2016<br>Total | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
|----------------------------|----------------|---------|---------|-----------------|----------------|------------------|---------------------|---------------|--------------------------------|
| <b>Project Cost Totals</b> | 43.854         | 1.729   | 1.687   | 1.849           | -              | 1.849            | -                   | 49.119        | -                              |

**Remarks**

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|                                                                   |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
|-------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|--------------------------------------------------------------------------------------------------|---|---|---------|---|---|---------------------|---------|-------------------------------------------------------------|---|---|---------|---|---|---|---------|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army                 |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   | Date: February 2015 |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| Appropriation/Budget Activity<br>2040 / 5                         |         |   |   |   |         |   |   |   |         | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |   |   |         |   |   |                     |         | Project (Number/Name)<br>L39 / Field Sustainment Support Ed |   |   |         |   |   |   |         |   |   |   |
| Event Name                                                        | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |                                                                                                  |   |   | FY 2017 |   |   |                     | FY 2018 |                                                             |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |
|                                                                   | 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 |
| Complete Advanced Low Velocity Airdrop System L&H (ALVADS) DV T   |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| Conduct Developmental Testing/Operational Testing DT/OT on ALVADS |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| (1) Milestone C ALVADS                                            |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| Fabricate EHLSCDS test assets                                     |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| Conduct DT and OT for EHLSCDS                                     |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| (2) Complete Milestone C/TC STD on EHLSCDS                        |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| Conduct DV on SADE Rotary A/C Auto Hookup                         |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| Conduct DT on SADE Rotary A/C Auto Hookup                         |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| Conduct OT on SADE Rotary A/C Auto Hookup                         |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| (3) Conduct Milestone C on SADE A/C Auto Hookup                   |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| JPADS Block I upgrade DT and OT                                   |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |
| (4) JPADS Block I Milestone C                                     |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                             |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                           | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>L39 / <i>Field Sustainment Support Ed</i> |                            |

**Schedule Details**

| <b>Events</b>                                                         | <b>Start</b>   |             | <b>End</b>     |             |
|-----------------------------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                                       | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| Complete Advanced Low Velocity Airdrop System L&H (ALVADS) DV Testing | 4              | 2014        | 3              | 2015        |
| Conduct Developmental Testing/Operational Testing DT/OT on ALVADS-L&H | 4              | 2015        | 2              | 2017        |
| Milestone C ALVADS                                                    | 4              | 2017        | 4              | 2017        |
| Fabricate EHLSCDS test assets                                         | 3              | 2016        | 3              | 2016        |
| Conduct DT and OT for EHLSCDS                                         | 3              | 2016        | 2              | 2017        |
| Complete Milestone C/TC STD on EHLSCDS                                | 1              | 2018        | 1              | 2018        |
| Conduct DV on SADE Rotary A/C Auto Hookup                             | 1              | 2018        | 2              | 2018        |
| Conduct DT on SADE Rotary A/C Auto Hookup                             | 1              | 2019        | 3              | 2019        |
| Conduct OT on SADE Rotary A/C Auto Hookup                             | 4              | 2019        | 1              | 2021        |
| Conduct Milestone C on SADE A/C Auto Hookup                           | 1              | 2020        | 1              | 2020        |
| JPADS Block I upgrade DT and OT                                       | 4              | 2018        | 2              | 2020        |
| JPADS Block I Milestone C                                             | 4              | 2020        | 4              | 2020        |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|----------------------------------------------------------------------|---------------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |         |         |                 |                                                                                                  |                  |         |         |                                                                      | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>L41 / Water And Petroleum Distribution - Ed |                     |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                              | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| L41: Water And Petroleum<br>Distribution - Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -              | 2.508   | 3.193   | 4.038           | -                                                                                                | 4.038            | 8.669   | 5.256   | 4.645                                                                | 4.645               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                                    | -                   |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |         |                 |                                                                                                  |                  |         |         |                                                                      |                     |                     |               |
| 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. These Engineering and Manufacturing Development programs enable the Army to improve maneuver sustainment operations to meet the demands of the Stryker Brigade Combat Teams and the 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 joint operations areas. |                |         |         |                 |                                                                                                  |                  |         |         |                                                                      |                     |                     |               |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                                              | FY 2015             | FY 2016             |               |
| Title: 3K Tactical Water Purification System (TWPS).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |         |                 |                                                                                                  |                  |         |         | 1.138                                                                | -                   | 1.025               |               |
| Description: Funding is provided for the following effort                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         |                                                                      |                     |                     |               |
| FY 2014 Accomplishments:<br>Design, fabricate and test 3K TWPS in a International Standard Organization (ISO) shelter. Develop a design for system strainer and identify a possible back-up high pressure pump.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |         |         |                 |                                                                                                  |                  |         |         |                                                                      |                     |                     |               |
| FY 2016 Plans:<br>Start fabrication of prototype 3K TWPS. Start development of Level II Technical Data Package (TDP). Complete Critical Design Review (CDR) in support of the prototype.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |         |         |                 |                                                                                                  |                  |         |         |                                                                      |                     |                     |               |
| Title: Integration of component level improvements at the system level for the Fuel System Supply Point (FSSP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |         |         |                 |                                                                                                  |                  |         |         | 0.500                                                                | -                   | -                   |               |
| Description: Funding is provided for the following effort                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         |                                                                      |                     |                     |               |
| FY 2014 Accomplishments:<br>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).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |         |         |                 |                                                                                                  |                  |         |         | 0.440                                                                | 0.311               | -                   |               |



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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                  | Date: February 2015                                                  |         |         |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>L41 / Water And Petroleum Distribution - Ed |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                  | FY 2014                                                              | FY 2015 | FY 2016 |
| <p><b>Description:</b> Funding is provided for the following effort</p> <p><b>FY 2014 Accomplishments:</b><br/>Prepare Material Development Decision (MDD) and initiate preparation of Milestone C program documentation. Evaluate a commercial automated packaging system from Conteno Corp, finalize Purchase Description (PD) and prepare Request for Proposal (RFP).</p> <p><b>FY 2015 Plans:</b><br/>Finalize and staff Milestone C program documents; Release Request for Proposal (RFP) and hold a Source Selection Evaluation Board (SSEB) to award EWPS production contract.</p>                                                                                                                                                                                                                                                                                               |                                                                                                  |                                                                      |         |         |
| <p><b>Title:</b> Modular Tactical Retail Refueling System (MTRRS)</p> <p><b>Description:</b> Funding is provided for the following effort.</p> <p><b>FY 2014 Accomplishments:</b><br/>Prepare documentation for Milestone C. Develop Computer-Aided Design models for Finite Element Analysis of stress. Prepare Systems Engineering Plan. Secure MDD decision.</p> <p><b>FY 2015 Plans:</b><br/>Initiate test, technical manuals and technical data package (drawing package). The technical data package will allow the Army to competitively procure the MTRRS and initiate prototype testing.</p> <p><b>FY 2016 Plans:</b><br/>Continue prototype testing from FY15. Refine technical manuals and technical data package (drawing package). Begin transioning technical data to program manager for competitive procurement. Prepare Milestone C documentation and develop RFP.</p> |                                                                                                  | 0.430                                                                | 1.000   | 0.800   |
| <p><b>Title:</b> Early Entry Fluid Distribution System (E2FDS).</p> <p><b>Description:</b> Funding is provided for the following effort</p> <p><b>FY 2015 Plans:</b><br/>Achieve Milestone B approval. Release RFP for Engineering and Manufacturing Development (EMD) contract. Source Selection Evaluation Board (SSEB) for EMD contract. Award EMD contract.</p> <p><b>FY 2016 Plans:</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                  | -                                                                    | 1.882   | 2.213   |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                   |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                | <b>Date:</b> February 2015  |                   |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                     |                |                |                         | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                          |                |                | <b>Project (Number/Name)</b><br>L41 / <i>Water And Petroleum Distribution - Ed</i> |                |                             |                   |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                          |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                | <b>FY 2014</b>              | <b>FY 2015</b>    | <b>FY 2016</b> |
| Award EMD contract. Complete initial design of E2FDS. Initiate the Critical Design Review of the E2FDS prototype. Initiate fabrication of prototypes for testing under EMD phase.                                                                                                                                                                                    |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                |                             |                   |                |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                    |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                | 2.508                       | 3.193             | 4.038          |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                             |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                |                             |                   |                |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                                                                     | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016<br/>Base</b> | <b>FY 2016<br/>OCO</b>                                                                                      | <b>FY 2016<br/>Total</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b>                                                                     | <b>FY 2020</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |                |
| • 0603804/K41: <i>RDTE, Logistics and Engineer Equipment - Advanced Development</i>                                                                                                                                                                                                                                                                                  | 2.187          | 3.543          | 3.764                   | -                                                                                                           | 3.764                    | 4.392          | 4.773          | 4.871                                                                              | 4.963          | Continuing                  | Continuing        |                |
| • MA6000: <i>OPA 3, Distribution Systems, Petroleum &amp; Water</i>                                                                                                                                                                                                                                                                                                  | 42.288         | 40.692         | 35.381                  | -                                                                                                           | 35.381                   | 37.949         | 42.169         | 39.112                                                                             | 40.843         | Continuing                  | Continuing        |                |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                       |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                |                             |                   |                |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                       |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                |                             |                   |                |
| Develop engineering prototypes for the 3K Tactical Water Purification System (3K TWPS), Modular Tactical Retail Refueling System (MTRRS), Early Entry Fluid Distribution System (E2FDS) and select Non-Development Item (NDI) based on market surveys and proposals from industry. Based on market research, will award either competitive or sole source contracts. |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                |                             |                   |                |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                        |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                |                             |                   |                |
| N/A                                                                                                                                                                                                                                                                                                                                                                  |                |                |                         |                                                                                                             |                          |                |                |                                                                                    |                |                             |                   |                |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b> |                                   |                                           |                    |                |                   |                                                                                                      |                   |                     |                   |                    |                   | <b>Date: February 2015</b>                                                  |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                                   |                                           |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>L41 / Water And Petroleum Distribution - Ed |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                       |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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                                 | 0.062              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.062             | -                               |
| <b>Subtotal</b>                                                   |                                   |                                           | 0.062              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.062             | -                               |
| <b>Remarks</b><br>not applicable                                  |                                   |                                           |                    |                |                   |                                                                                                      |                   |                     |                   |                    |                   |                                                                             |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                       |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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 System Capability Improvements                              | Various                           | TARDEC : Warren, MI                       | 0.184              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.184             | Continuing                      |
| FSSP Improvements                                                 | Various                           | TARDEC : Warren, MI                       | 3.211              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 3.211             | Continuing                      |
| Water Systems Capability Improvements                             | Various                           | TBD : TBD                                 | 0.154              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.154             | Continuing                      |
| Expeditionary Water Packaging System (EWPS)                       | Various                           | TARDEC : Warren, MI                       | 0.850              | 0.110          | Feb 2014          | 0.311                                                                                                |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 1.271             | Continuing                      |
| 3K Tactical Water Purification System (3K TWPS)                   | Various                           | NFESC : Pt. Hueneme, CA                   | 0.000              | 0.220          | Feb 2014          | -                                                                                                    |                   | 0.150               | Oct 2015          | -                  |                   | 0.150                                                                       | -                       | 0.370             | Continuing                      |
| Early Entry Fluid Distribution System (E2FDS)                     | C/FFP                             | TBD : TBD                                 | 0.000              | -              |                   | 0.984                                                                                                |                   | 1.800               | Mar 2016          | -                  |                   | 1.800                                                                       | -                       | 2.784             | Continuing                      |
| Modular Tactical Retail Refueling System (MTRRS)                  | MIPR                              | TARDEC : Warren, MI                       | 1.037              | 0.360          | Mar 2014          | 0.200                                                                                                |                   | 0.350               | Mar 2016          | -                  |                   | 0.350                                                                       | -                       | 1.947             | Continuing                      |
| 3K Tactical Water Purification System (3K TWPS)                   | MIPR                              | TARDEC : Warren, MI                       | 0.000              | 0.638          | Mar 2014          | -                                                                                                    |                   | 0.706               | Oct 2015          | -                  |                   | 0.706                                                                       | -                       | 1.344             | Continuing                      |
| <b>Subtotal</b>                                                   |                                   |                                           | 5.436              | 1.328          |                   | 1.495                                                                                                |                   | 3.006               |                   | -                  |                   | 3.006                                                                       | -                       | 11.265            | -                               |

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|-------------------------------------------------------------------|-----------------------------------|-------------------------------------------|--------------------|----------------|-------------------|------------------------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|-----------------------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b> |                                   |                                           |                    |                |                   |                                                                                                      |                   |                     |                   |                    |                   | <b>Date: February 2015</b>                                                  |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                                   |                                           |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>L41 / Water And Petroleum Distribution - Ed |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                   |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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 System Supply Point (FSSP)                                   | Various                           | TARDEC : Warren, MI                       | 0.501              | 0.480          | Feb 2014          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.981             | Continuing                      |
| Early Entry Fluid Distribution System (E2FDS)                     | MIPR                              | TBD : TBD                                 | 0.000              | -              |                   | 0.898                                                                                                |                   | 0.382               | Oct 2015          | -                  |                   | 0.382                                                                       | -                       | 1.280             | Continuing                      |
| Expeditionary Water Packaging System (EWPS)                       | Various                           | TARDEC : Warren, MI                       | 0.100              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.100             | Continuing                      |
| Contingency Based Infrastructure (CBI)                            | SS/FFP                            | PEO, CS&CSS, PM, CBI : Warren, MI         | 0.284              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.284             | -                               |
| <b>Subtotal</b>                                                   |                                   |                                           | 0.885              | 0.480          |                   | 0.898                                                                                                |                   | 0.382               |                   | -                  |                   | 0.382                                                                       | -                       | 2.645             | -                               |
| <b>Test and Evaluation (\$ in Millions)</b>                       |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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 System Supply Point (FSSP)                                   | MIPR                              | YUMA : Yuma, AZ                           | 0.650              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.650             | -                               |
| Expeditionary Water Packaging system (EWPS)                       | Various                           | TARDEC : Warren, MI                       | 0.255              | 0.300          | Mar 2014          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.555             | Continuing                      |
| Expeditionary Water Packaging System (EWPS)                       | Various                           | NFESC : Port Hueneme, CA                  | 0.300              | 0.100          | Dec 2013          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                           | -                       | 0.400             | -                               |
| 3K Tactical Water Purification System (3K TWPS)                   | MIPR                              | TARDEC : Warren, MI                       | 0.000              | 0.300          | Feb 2014          | -                                                                                                    |                   | 0.200               | Oct 2015          | -                  |                   | 0.200                                                                       | -                       | 0.500             | Continuing                      |
| Modular Tactical Retail Refueling System (MTRRS)                  | Various                           | Yuma : Yuma Proving Ground, AZ            | 0.000              | -              |                   | 0.800                                                                                                |                   | 0.450               | Mar 2016          | -                  |                   | 0.450                                                                       | -                       | 1.250             | Continuing                      |
| <b>Subtotal</b>                                                   |                                   |                                           | 1.205              | 0.700          |                   | 0.800                                                                                                |                   | 0.650               |                   | -                  |                   | 0.650                                                                       | -                       | 3.355             | -                               |

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|--------------------------------------------------------|--|--|----------------|---------|--------------------------------------------------------------------------------------------------|---------|--|-----------------|--|----------------------------------------------------------------------|---------------------|------------------|---------------------|---------------|--------------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army |  |  |                |         |                                                                                                  |         |  |                 |  |                                                                      | Date: February 2015 |                  |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5              |  |  |                |         | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |         |  |                 |  | Project (Number/Name)<br>L41 / Water And Petroleum Distribution - Ed |                     |                  |                     |               |                                |
|                                                        |  |  | Prior<br>Years | FY 2014 |                                                                                                  | FY 2015 |  | FY 2016<br>Base |  | FY 2016<br>OCO                                                       |                     | FY 2016<br>Total | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Project Cost Totals                                    |  |  | 7.588          | 2.508   |                                                                                                  | 3.193   |  | 4.038           |  | -                                                                    |                     | 4.038            | -                   | 17.327        | -                              |

Remarks

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| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army |                                            |   |   |   |                                        |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   | Date: February 2015                                                  |         |   |   |   |         |   |   |   |  |
|---------------------------------------------------|--------------------------------------------|---|---|---|----------------------------------------|---|---|---|---------|--------------------------------------------------------------------------------------------------|---|---|---------|---|---|---|---------|---|---|----------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|--|
| Appropriation/Budget Activity<br>2040 / 5         |                                            |   |   |   |                                        |   |   |   |         | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |   |   |         |   |   |   |         |   |   | Project (Number/Name)<br>L41 / Water And Petroleum Distribution - Ed |         |   |   |   |         |   |   |   |  |
| Event Name                                        | FY 2014                                    |   |   |   | FY 2015                                |   |   |   | FY 2016 |                                                                                                  |   |   | FY 2017 |   |   |   | FY 2018 |   |   |                                                                      | FY 2019 |   |   |   | FY 2020 |   |   |   |  |
|                                                   | 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 |  |
| Modular Tactical Retail Refueling System (MTRRS)  | Prototype; Test; MS B; MS C doc.; Dev. RFP |   |   |   |                                        |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Fuel System Supply Points (FSSPs) Common Pumps    | Common Pump                                |   |   |   |                                        |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Expeditionary Water Packaging System (EWPS)       | RFP/Prototype Test/Award                   |   |   |   |                                        |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Early Entry Fluid Distribution System (E2FDS)     |                                            |   |   |   | MS B approval/ RFP; SSEB; EMD;CDR;Test |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| 3K Tactical Water Purification System (3K TWPS)   |                                            |   |   |   | Prototype ; CDR; RFP; MS C             |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Bulk Fuels Storage Module (BFSM)                  |                                            |   |   |   | Dev. BFSM Sys.                         |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Army Fuels Automated Management System (AFAMS)    |                                            |   |   |   | Dev. System                            |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Water Bison                                       |                                            |   |   |   | Water Bison                            |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Waste Water/Water Recycle Systems                 |                                            |   |   |   | Waste Water/Water Recycle              |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Water From Air                                    |                                            |   |   |   | Water From Air                         |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
| Petroleum Test Kit (PTK)                          |                                            |   |   |   | PTK                                    |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |
|                                                   |                                            |   |   |   |                                        |   |   |   |         |                                                                                                  |   |   |         |   |   |   |         |   |   |                                                                      |         |   |   |   |         |   |   |   |  |

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|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                                    | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>L41 / <i>Water And Petroleum Distribution - Ed</i> |                            |

**Schedule Details**

| <b>Events</b>                                    | <b>Start</b>   |             | <b>End</b>     |             |
|--------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                  | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| Modular Tactical Retail Refueling System (MTRRS) | 1              | 2014        | 4              | 2017        |
| Fuel System Supply Points (FSSPs) Common Pumps   | 4              | 2012        | 4              | 2014        |
| Expeditionary Water Packaging System (EWPS)      | 1              | 2011        | 4              | 2015        |
| Early Entry Fluid Distribution System (E2FDS)    | 1              | 2015        | 4              | 2018        |
| 3K Tactical Water Purification System (3K TWPS)  | 4              | 2015        | 4              | 2019        |
| Bulk Fuels Storage Module (BFSM)                 | 1              | 2017        | 4              | 2018        |
| Army Fuels Automated Management System (AFAMS)   | 1              | 2017        | 4              | 2019        |
| Water Bison                                      | 1              | 2018        | 4              | 2018        |
| Waste Water/Water Recycle Systems                | 1              | 2019        | 4              | 2021        |
| Water From Air                                   | 3              | 2019        | 4              | 2021        |
| Petroleum Test Kit (PTK)                         | 1              | 2020        | 4              | 2021        |

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|---------------------------------------------------------|-------------|---------|---------|--------------|-----------------------------------------------------------------------------------------------|---------------|---------|---------|----------------------------------------------------------------|---------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |             |         |         |              |                                                                                               |               |         |         |                                                                | Date: February 2015 |                  |            |
| Appropriation/Budget Activity<br>2040 / 5               |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |               |         |         | Project (Number/Name)<br>L43 / ENGINEER SUPPORT EQUIPMENT - ED |                     |                  |            |
| COST (\$ in Millions)                                   | Prior Years | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO                                                                                   | FY 2016 Total | FY 2017 | FY 2018 | FY 2019                                                        | FY 2020             | Cost To Complete | Total Cost |
| L43: ENGINEER SUPPORT EQUIPMENT - ED                    | -           | -       | 0.575   | 1.246        | -                                                                                             | 1.246         | 1.259   | 1.260   | 1.766                                                          | 0.666               | Continuing       | Continuing |
| Quantity of RDT&E Articles                              | -           | -       | -       | -            | -                                                                                             | -             | -       | -       | -                                                              | -                   |                  |            |

**Note**

Not applicable for this item.

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

This project supports development, demonstration, testing and evaluation within the Combat Engineer and Construction Support Equipment arena. These items include critical life support equipment such as diving, fire fighting, fire suppression, urban operations, breathable air compressors, and emergency and recovery sets along with engineer safety and special unit support equipment. The Combat Engineer and Construction equipment consists of the Surveying, Firefighting Individual Requirements Equipment Support (FIRES), Urban Search and Rescue (USR), Fire Protection Equipment Type I, II and III, Tactical Fire Fighting Truck Tools (TFTT), Family of Electrical Personal Protective Equipment (FoEPPE) Family of Power Utility Kits (FoPUK), Distribution Utility Construction Kits (DUCT) and Soldier Portable Kits, Lineman's Tool Kit, Concrete and Masonry, Electricians, Plumbers, Pipefitters, Family of Light Sets (FoLS), 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 Soldier Portable SKO, and critical life support equipment such as the Deep Sea Set, Underwater Construction Set, Closed Circuit Scuba Set, Supervisor Propulsion Emergency and Recovery SCUBA (SPEaRS), Divers' Supplemental Issue Set(DSIS), Vertical Skills Engineer Construction Kit (VSECK), and Family of Boats and Motors (FOBAM). All of these programs are in the Engineering and Manufacturing Development Phase.

BUDGET ITEM JUSTIFICATION: These systems provide state-of-the-art deployable, critical life support and combat engineer and construction equipment along with engineer safety and special unit support equipment supporting the joint warfighter. These programs will minimize transportation requirements and reduce the logistical footprint by eliminating obsolete equipment and reducing the number of programs. Funding shall allow for development of dual use systems that support wartime use by soldiers to include Special Forces and peacetime operations that include national disaster relief and homeland security operations. Much of this equipment has an inherent short Economic Useful Life (EUL). Investments used to revise, update and obtain equipment within this portfolio has resulted in reductions in footprint, and increases in safety, effectiveness, and readiness.

**B. Accomplishments/Planned Programs (\$ in Millions)**

|                                                                              | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016</b> |
|------------------------------------------------------------------------------|----------------|----------------|----------------|
| <b>Title:</b> Family of Boats and Motors (FOBAM)                             | -              | 0.525          | 0.180          |
| <b>Description:</b> Development of various Assault Boats and Outboard Motors |                |                |                |
| <b>FY 2015 Plans:</b>                                                        |                |                |                |



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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------|---------|---------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                             |                                                                                                  |                                                                   | Date: February 2015 |         |         |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                           | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>L43 / ENGINEER SUPPORT EQUIPMENT -<br>ED |                     |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                |                                                                                                  |                                                                   | FY 2014             | FY 2015 | FY 2016 |
| Purchase and Test the Rigid Inflatable Boat                                                                                                                         |                                                                                                  |                                                                   |                     |         |         |
| FY 2016 Plans:<br>Support for logistics support plans and Full Rate Production Decision (Milestone C, Type Classification, Full Material Release)                   |                                                                                                  |                                                                   |                     |         |         |
| Title: Supervisory Propulsion, Emergency and Recovery Set (SPEARS)<br>Description: Market Research for the SPEARS                                                   |                                                                                                  |                                                                   | -                   | 0.050   | -       |
| FY 2015 Plans:<br>Market Research                                                                                                                                   |                                                                                                  |                                                                   |                     |         |         |
| Title: Engineering and Quality Assurance<br>Description: Engineering and Quality Assurance of engineering SKOs                                                      |                                                                                                  |                                                                   | -                   | -       | 0.400   |
| FY 2016 Plans:<br>Engineering Spt- 75K for Boats, Motors, Diving; 200K for Soldier Portable<br>QA Support- 25K for Boats, Motors, Diving; 100K for Soldier Portable |                                                                                                  |                                                                   |                     |         |         |
| Title: Vertical Skills Engineer Construction Kit (VSECK)<br>Description: Research, Development, and Testing of Vertical Skills Engineer Construction Kit (VSECK)    |                                                                                                  |                                                                   | -                   | -       | 0.406   |
| FY 2016 Plans:<br>Procure market samples for Type 1 through Type 6 kits                                                                                             |                                                                                                  |                                                                   |                     |         |         |
| Title: Support for Requirements Generation<br>Description: Support for Requirements Generation of Future SKOs                                                       |                                                                                                  |                                                                   | -                   | -       | 0.260   |
| FY 2016 Plans:<br>Document Development Supporting Fututre Requirements SKOs                                                                                         |                                                                                                  |                                                                   |                     |         |         |
| Accomplishments/Planned Programs Subtotals                                                                                                                          |                                                                                                  |                                                                   | -                   | 0.575   | 1.246   |
|                                                                                                                                                                     |                                                                                                  |                                                                   |                     |         |         |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|-------------------------------------------------------------------|---------|---------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                        |         |         |                 |                                                                                                  |                  |         |         |                                                                   |         | Date: February 2015 |            |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                      |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>L43 / ENGINEER SUPPORT EQUIPMENT -<br>ED |         |                     |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                              |         |         |                 |                                                                                                  |                  |         |         |                                                                   |         |                     |            |
| Line Item                                                                                                                                                                                                                                                                                                                                                                                                                      | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                           | FY 2020 | Cost To<br>Complete | Total Cost |
| • OPA 3 ML5325: OPA 3<br>ML5325, Items Less than<br>\$5.0M (Engineering Support)                                                                                                                                                                                                                                                                                                                                               | 5.859   | 20.090  | 0.595           | -                                                                                                | 0.595            | -       | -       | -                                                                 | -       | Continuing          | Continuing |
| • OPA 3 R70001: OPA 3<br>R70001, Family of Engineering<br>Combat and Construction Sets                                                                                                                                                                                                                                                                                                                                         | 38.141  | 41.967  | 34.544          | -                                                                                                | 34.544           | 31.272  | 32.667  | 34.796                                                            | 28.612  | Continuing          | Continuing |
| • OPA 3 R12001: OPA 3 R12001,<br>Family of Boats and Motors                                                                                                                                                                                                                                                                                                                                                                    | -       | -       | 8.429           | -                                                                                                | 8.429            | 3.224   | 4.348   | 6.019                                                             | 7.620   | -                   | 29.640     |
| • OPA 3 R07005: OPA 3 R07005,<br>Family of Diver Support Equipment                                                                                                                                                                                                                                                                                                                                                             | -       | -       | 0.446           | -                                                                                                | 0.446            | -       | -       | -                                                                 | -       | -                   | 0.446      |
| • OPA 3 W01103: OPA 3<br>W01103, Protective Systems                                                                                                                                                                                                                                                                                                                                                                            | -       | -       | 0.248           | -                                                                                                | 0.248            | 1.761   | 1.647   | 1.707                                                             | -       | -                   | 5.363      |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                        |         |         |                 |                                                                                                  |                  |         |         |                                                                   |         |                     |            |
| D. Acquisition Strategy                                                                                                                                                                                                                                                                                                                                                                                                        |         |         |                 |                                                                                                  |                  |         |         |                                                                   |         |                     |            |
| 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 Engineering and Manufacturing Development (EMD) and transition into production. |         |         |                 |                                                                                                  |                  |         |         |                                                                   |         |                     |            |
| E. Performance Metrics                                                                                                                                                                                                                                                                                                                                                                                                         |         |         |                 |                                                                                                  |                  |         |         |                                                                   |         |                     |            |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                            |         |         |                 |                                                                                                  |                  |         |         |                                                                   |         |                     |            |

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|----------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------|---------|---------------|--------------------------------------------------------------------------------------------------|---------------|-----------------|---------------|-------------------------------------------------------------------|---------------|---------------------|---------------------|---------------|--------------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army                                                         |                              |                                                                                                                                  |                |         |               |                                                                                                  |               |                 |               |                                                                   |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5                                                                      |                              |                                                                                                                                  |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>L43 / ENGINEER SUPPORT EQUIPMENT -<br>ED |               |                     |                     |               |                                |
| Management Services (\$ in Millions)                                                                           |                              |                                                                                                                                  |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                    |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                                                                             | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                                                                                | 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 |
| SBIR/STTR                                                                                                      | TBD                          | Various : Various                                                                                                                | 0.033          | -       |               | -                                                                                                |               | -               |               | -                                                                 |               | -                   | -                   | 0.033         | -                              |
| Subtotal                                                                                                       |                              |                                                                                                                                  | 0.033          | -       |               | -                                                                                                |               | -               |               | -                                                                 |               | -                   | -                   | 0.033         | -                              |
| Product Development (\$ in Millions)                                                                           |                              |                                                                                                                                  |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                    |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                                                                             | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                                                                                | 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 |
| Rigid Inflatable Boats test<br>articles                                                                        | C/FP                         | TBS : TBS                                                                                                                        | 0.000          | -       |               | 0.250                                                                                            | Dec 2014      | -               |               | -                                                                 |               | -                   | Continuing          | Continuing    | Continuing                     |
| 3-man boat test articles                                                                                       | C/FP                         | TBS : TBS                                                                                                                        | 0.000          | -       |               | 0.060                                                                                            | Jan 2015      | -               |               | -                                                                 |               | -                   | Continuing          | Continuing    | Continuing                     |
| Market Samples for<br>Supervisory, Propulsion,<br>Emergency and Recovery<br>Set (SPEARS)                       | C/FP                         | TBS : TBS                                                                                                                        | 0.000          | -       |               | 0.050                                                                                            | Feb 2015      | -               |               | -                                                                 |               | -                   | Continuing          | Continuing    | Continuing                     |
| Market Samples of<br>Vertical Skills Engineer<br>Construction Kit (VSECK)                                      | C/FP                         | TBS : TBS                                                                                                                        | 0.120          | -       |               | -                                                                                                |               | 0.406           | Jan 2016      | -                                                                 |               | 0.406               | Continuing          | Continuing    | Continuing                     |
| Engineer Support<br>Equipment Life Cycle<br>Configuration Analyses<br>and ICD, CDD, CPD<br>Development Support | MIPR                         | PM SKOT/ Army<br>Test & Evaluation<br>Command (ATEC)/<br>Manuever Support<br>Center of Excellence<br>(MSCoE) : IL, MI,<br>MD, MO | 0.000          | -       |               | -                                                                                                |               | 0.260           | Nov 2015      | -                                                                 |               | 0.260               | Continuing          | Continuing    | Continuing                     |
| Subtotal                                                                                                       |                              |                                                                                                                                  | 0.120          | -       |               | 0.360                                                                                            |               | 0.666           |               | -                                                                 |               | 0.666               | -                   | -             | -                              |
| Support (\$ in Millions)                                                                                       |                              |                                                                                                                                  |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                    |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                                                                             | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                                                                                | 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 |
| Rigid Inflatable Boat                                                                                          | MIPR                         | ECBC : Rock Island,<br>IL                                                                                                        | 0.000          | -       |               | -                                                                                                |               | 0.180           | Dec 2015      | -                                                                 |               | 0.180               | Continuing          | Continuing    | Continuing                     |

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|--------------------------------------------------------------------------|-----------------------------------|-------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------|-------------------|----------------|-------------------|---------------------|-------------------|-----------------------------------------------------------------------|-------------------|----------------------|----------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b>        |                                   |                                           |                    |                                                                                                      |                   |                |                   |                     |                   |                                                                       |                   |                      | <b>Date:</b> February 2015 |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                         |                                   |                                           |                    | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |                   |                |                   |                     |                   | <b>Project (Number/Name)</b><br>L43 / ENGINEER SUPPORT EQUIPMENT - ED |                   |                      |                            |                   |                                 |
| <b>Support (\$ in Millions)</b>                                          |                                   |                                           |                    | <b>FY 2014</b>                                                                                       |                   | <b>FY 2015</b> |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b>                                                    |                   | <b>FY 2016 Total</b> |                            |                   |                                 |
| <b>Cost Category Item</b>                                                | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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> |
| Engineering and Quality Assurance of engineering SKOs (Soldier Portable) | MIPR                              | ECBC/ARDEC : Rock Island, IL              | 0.278              | -                                                                                                    |                   | -              |                   | 0.300               | Nov 2015          | -                                                                     |                   | 0.300                | Continuing                 | Continuing        | Continuing                      |
| Engineering and Quality Assurance (Boats and Motors)                     | MIPR                              | ECBC : Rock Island, IL                    | 0.200              | -                                                                                                    |                   | -              |                   | 0.100               | Nov 2015          | -                                                                     |                   | 0.100                | Continuing                 | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                          |                                   |                                           | 0.478              | -                                                                                                    |                   | -              |                   | 0.580               |                   | -                                                                     |                   | 0.580                | -                          | -                 | -                               |
| <b>Test and Evaluation (\$ in Millions)</b>                              |                                   |                                           |                    | <b>FY 2014</b>                                                                                       |                   | <b>FY 2015</b> |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b>                                                    |                   | <b>FY 2016 Total</b> |                            |                   |                                 |
| <b>Cost Category Item</b>                                                | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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> |
| Testing of Boats and Motors                                              | MIPR                              | NAVSEA : VA                               | 0.625              | -                                                                                                    |                   | 0.215          | Mar 2015          | -                   |                   | -                                                                     |                   | -                    | Continuing                 | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                          |                                   |                                           | 0.625              | -                                                                                                    |                   | 0.215          |                   | -                   |                   | -                                                                     |                   | -                    | -                          | -                 | -                               |
|                                                                          |                                   |                                           | <b>Prior Years</b> | <b>FY 2014</b>                                                                                       |                   | <b>FY 2015</b> |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b>                                                    |                   | <b>FY 2016 Total</b> | <b>Cost To Complete</b>    | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                               |                                   |                                           | 1.256              | -                                                                                                    |                   | 0.575          |                   | 1.246               |                   | -                                                                     |                   | 1.246                | -                          | -                 | -                               |
| <b>Remarks</b>                                                           |                                   |                                           |                    |                                                                                                      |                   |                |                   |                     |                   |                                                                       |                   |                      |                            |                   |                                 |

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|-------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--------------------------------------------------------------------------------------------------|---|---|---|---------|---|---------------------|---|-------------------------------------------------------------------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army                       |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   | Date: February 2015 |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Appropriation/Budget Activity<br>2040 / 5                               |  |  |  |  |  |  |  |  |  | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |   |   |   |         |   |                     |   | Project (Number/Name)<br>L43 / ENGINEER SUPPORT EQUIPMENT -<br>ED |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Event Name                                                              |  |  |  |  |  |  |  |  |  | FY 2014                                                                                          |   |   |   | FY 2015 |   |                     |   | FY 2016                                                           |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  | 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 |
| Design, develop, build, and test Diving Support Equipment               |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Procurement of test articles and testing of Rigid Inflatable Boat       |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Procure test articles & test Engineer Construction and Soldier Portable |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Procure Test Articles and Test Vertical Skills Engineering Construction |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   |                                                                   |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                              | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>L43 / <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                            |

Schedule Details

| Events                                                                       | Start   |      | End     |      |
|------------------------------------------------------------------------------|---------|------|---------|------|
|                                                                              | Quarter | Year | Quarter | Year |
| Design, develop, build, and test Diving Support Equipment                    | 1       | 2019 | 4       | 2020 |
| Procurement of test articles and testing of Rigid Inflatable Boat            | 1       | 2015 | 1       | 2016 |
| Procure test articles & test Engineer Construction and Soldier Portable Kits | 1       | 2017 | 4       | 2018 |
| Procure Test Articles and Test Vertical Skills Engineering Construction Kit  | 1       | 2016 | 1       | 2017 |

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|                                                         |                |         |         |                 |                                                                                                  |                  |         |         |                                                              |                     |                     |               |
|---------------------------------------------------------|----------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|--------------------------------------------------------------|---------------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |                |         |         |                 |                                                                                                  |                  |         |         |                                                              | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5               |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>L46 / Maintenance Support Equipment |                     |                     |               |
| COST (\$ in Millions)                                   | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                      | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| L46: Maintenance Support<br>Equipment                   | -              | 1.191   | 1.003   | 1.412           | -                                                                                                | 1.412            | 2.103   | 2.072   | 1.902                                                        | 1.938               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                              | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                            | -                   |                     |               |

**Note**

Not applicable for this item.

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

Mobile Maintenance Equipment provides state of the art, deployable, vehicle-mounted and containerized shelter tool systems supporting the Joint warfighter. These systems are equipped with industrial quality tools required for Two Level Maintenance that reduce common tool redundancy, provide tool standardization, minimize transportation requirements, reduces logistical footprint, and are backed by a Lifetime Warranty/Replacement Program which reduces sustainment costs. This is accomplished by employing a system of systems approach to maintenance acquisition. The system of systems approach builds a maintenance capability upon each system, allowing a logical and natural approach to the Army's overall two level maintenance strategy. These inter-connected systems distributed throughout the Army at multiple levels and echelons provide a holistic repair capability in all scenarios and environments. These systems provide the Maintenance and Combat Commanders an unprecedented capability to repair wheeled, tracked, aviation, ground support and weapons systems on site at one location at one time. This approach to maintenance acquisition increases efficiencies and supports the current force while providing modular configurations designed to meet the specific needs of the Army maintainer in today's complex transforming environment. All of these programs are in the Engineering and Manufacturing Development Phase.

BUDGET ITEM JUSTIFICATION: The need to develop and maintain a System of System maintenance approach is critical due to the growing complexity of today's military equipment, operational tempo, modularity, and current and evolving Tactics Techniques and Procedures (TTPs). The individual maintenance systems are comprehensive, interconnected and capable of solving and repairing any maintenance problems. The System of Systems approach does not advocate specific tools, methods or practices; instead it seeks to promote a streamlined comprehensive set of systems for solving maintenance challenges where the interactions of doctrine, technology, time and tactics techniques and procedures are the primary drivers. Funding for projects shall include test article procurement and testing of soldier portable maintenance SKOs and load banks; investigation of new technologies for next generation mobile maintenance equipment shop sets including the Shop Equipment Welding (SEW) and Shop Equipment Contact Maintenance (SECM); development of additional SATS maintenance modules, Special Tools initiatives; packaging development; and technical support for emerging JCIDS materiel requirements documents. Upgrades to existing shelter mounted systems to include a 3-D printing/additive manufacturing capability. Modernization upgrades to increase effectiveness while improving efficiency, reliability and maintainability while supporting emerging Army systems to include the Joint Light Tactical Vehicle (JLTV).

**B. Accomplishments/Planned Programs (\$ in Millions)**

|                                                                                | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016</b> |
|--------------------------------------------------------------------------------|----------------|----------------|----------------|
| <b>Title:</b> Next Generation Shop Equipment, Welding (SEW)                    | -              | -              | 0.747          |
| <b>Description:</b> Develop and Test new components of Shop Equipment, Welding |                |                |                |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                               |                                                                                                  | Date: February 2015                                          |         |         |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                             | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>L46 / Maintenance Support Equipment |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                  |                                                                                                  | FY 2014                                                      | FY 2015 | FY 2016 |
| FY 2016 Plans:<br>Buying Production Representative Sample                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |                                                              |         |         |
| Title: Next Generation Shop Equipment, Contact Maintenance (SECM)<br>Description: Design, Develop, Procure and Test Next Generation SECM, designed for Joint Light Tactical Vehicle (JLTV) platform<br>FY 2016 Plans:<br>Design improved SECM for JLTV platform                                                                                                                                       |                                                                                                  | -                                                            | -       | 0.200   |
| Title: Mobile Maintenance Equipment Shop Set<br>Description: Modernization / Redesign efforts of maintenance support equipment in support of technological advances, environmental/safety constraints and to support emerging systems<br>FY 2014 Accomplishments:<br>Next Generation Ordnance SKO<br>FY 2015 Plans:<br>Next generation Ordnance SKO<br>FY 2016 Plans:<br>Next generation Ordnance SKO |                                                                                                  | 0.522                                                        | 0.449   | 0.050   |
| Title: Support for Requirements Generation<br>Description: Support for requirements generation of future SKOs<br>FY 2014 Accomplishments:<br>Document development supporting future requirements SKOs<br>FY 2015 Plans:<br>Document development supporting future requirements SKOs<br>FY 2016 Plans:<br>Document development supporting future requirements SKOs                                     |                                                                                                  | 0.125                                                        | 0.104   | 0.102   |
| Title: Special Tools Initiative                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                  | 0.050                                                        | 0.300   | 0.050   |



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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                  | Date: February 2015                                          |         |         |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>L46 / Maintenance Support Equipment |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                  | FY 2014                                                      | FY 2015 | FY 2016 |
| <b>Description:</b> Develop Rapid Deployment Sets, Kits, and Outfits (SKOs) - Special Tool Initiative and support to Tactical Wheeled Vehicles and other vehicle platforms<br><br><b>FY 2014 Accomplishments:</b><br>Develop and test various Soldier Portable Tool Kits based on the maintenance requirements of current and future platforms.<br><br><b>FY 2015 Plans:</b><br>Develop and test various Soldier Portable Tool Kits based on the maintenance requirements of current and future platforms.<br><br><b>FY 2016 Plans:</b><br>Develop and test various Soldier Portable Tool Kits based on the maintenance requirements of current and future platforms |                                                                                                  |                                                              |         |         |
| <b>Title:</b> Refrigeration Tool Kit (RTK)<br><br><b>Description:</b> Develop and Test RTK<br><br><b>FY 2016 Plans:</b><br>Develop RTK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                  | -                                                            | -       | 0.263   |
| <b>Title:</b> Packaging Support<br><br><b>Description:</b> Full Packaging Program Support and Packaging Data Management<br><br><b>FY 2014 Accomplishments:</b><br>Full Packaging Program Support and Packaging Data Management<br><br><b>FY 2015 Plans:</b><br>Develop and Maintain Logistics Packaging, Packing and Palletization data                                                                                                                                                                                                                                                                                                                              |                                                                                                  | 0.050                                                        | 0.150   | -       |
| <b>Title:</b> Fire Suppression Refill System (FSRS)<br><br><b>Description:</b> Design, Develop, Build, and Test SATS Future Field Modules<br><br><b>FY 2014 Accomplishments:</b><br>Develop Fire Suppression Refill System                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                  | 0.444                                                        | -       | -       |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                  | 1.191                                                        | 1.003   | 1.412   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                  |                                                              |         |         |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                    |                |                |                |                                                                                                             |                |                |                |                                                                            |                | <b>Date:</b> February 2015 |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                      |                |                |                | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                |                |                | <b>Project (Number/Name)</b><br>L46 / <i>Maintenance Support Equipment</i> |                |                            |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                              |                |                |                |                                                                                                             |                |                |                |                                                                            |                |                            |                   |
|                                                                                                                                                                                                                                                                                                       |                |                | <u>FY 2016</u> | <u>FY 2016</u>                                                                                              | <u>FY 2016</u> |                |                |                                                                            |                | <u>Cost To</u>             |                   |
| <u>Line Item</u>                                                                                                                                                                                                                                                                                      | <u>FY 2014</u> | <u>FY 2015</u> | <u>Base</u>    | <u>OCO</u>                                                                                                  | <u>Total</u>   | <u>FY 2017</u> | <u>FY 2018</u> | <u>FY 2019</u>                                                             | <u>FY 2020</u> | <u>Complete</u>            | <u>Total Cost</u> |
| • OPA 3 ML5345: OPA 3<br>ML5345, Items Less Than \$5.0M<br>(MAINTENANCE EQUIPMENT)                                                                                                                                                                                                                    | 3.860          | 2.789          | 2.760          | -                                                                                                           | 2.760          | 2.759          | 2.759          | 2.767                                                                      | 3.771          | Continuing                 | Continuing        |
| • OPA 3 G05301: OPA 3<br>G05301, Mobile Maintenance<br>Equipment Systems                                                                                                                                                                                                                              | 12.177         | 23.758         | 25.270         | -                                                                                                           | 25.270         | 24.317         | 23.675         | 27.853                                                                     | 28.382         | 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 the 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>                                                                                                                                                                                                                                                                         |                |                |                |                                                                                                             |                |                |                |                                                                            |                |                            |                   |
| N/A                                                                                                                                                                                                                                                                                                   |                |                |                |                                                                                                             |                |                |                |                                                                            |                |                            |                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b>                                |                                   |                                                                                                           |                    |                |                   |                                                                                                      |                   |                     |                   |                    |                   | <b>Date:</b> February 2015                                          |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                 |                                   |                                                                                                           |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>L46 / Maintenance Support Equipment |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                      |                                   |                                                                                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                        | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                                                 | <b>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                                                                                         | 0.096              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                   | -                       | 0.096             | -                               |
| <b>Subtotal</b>                                                                                  |                                   |                                                                                                           | 0.096              | -              |                   | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                   | -                       | 0.096             | -                               |
| <b>Product Development (\$ in Millions)</b>                                                      |                                   |                                                                                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                        | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                                                 | <b>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          | Jun 2014          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                   | Continuing              | Continuing        | Continuing                      |
| Next Generation Shop Equipment Welding (SEW) concept design and development                      | MIPR                              | ECBC : Rock Island, IL                                                                                    | 0.900              | -              |                   | -                                                                                                    |                   | 0.747               | Nov 2015          | -                  |                   | 0.747                                                               | Continuing              | Continuing        | Continuing                      |
| Modernization/Redesign efforts of Truck/Trailer transported shelters for next generation systems | MIPR                              | ECBC : Rock Island, IL                                                                                    | 0.689              | 0.522          | Dec 2013          | 0.449                                                                                                | Dec 2014          | 0.050               | Feb 2016          | -                  |                   | 0.050                                                               | Continuing              | Continuing        | Continuing                      |
| Develop Rapid Deployment Sets, Kits, & Outfits - Special Tool Initiative.                        | MIPR                              | ECBC : Rock Island, IL                                                                                    | 0.250              | 0.050          | Jun 2014          | -                                                                                                    |                   | 0.050               | Jan 2016          | -                  |                   | 0.050                                                               | Continuing              | Continuing        | Continuing                      |
| Procure Ground Based Special Tools in support of Tactical Wheeled Vehicles                       | MIPR                              | PM SKOT : Harrison, MI                                                                                    | 0.000              | -              |                   | 0.300                                                                                                | Jan 2016          | -                   |                   | -                  |                   | -                                                                   | Continuing              | Continuing        | Continuing                      |
| Refrigeration Tool Kit (RTK)                                                                     | TBD                               | TBD : TBD                                                                                                 | 0.000              | -              |                   | -                                                                                                    |                   | 0.263               | Jan 2016          | -                  |                   | 0.263                                                               | Continuing              | Continuing        | Continuing                      |
| Next Generation Shop Equipment Contact Maintenance (SECM)                                        | C/TBD                             | TBD : TBD                                                                                                 | 0.000              | -              |                   | -                                                                                                    |                   | 0.200               | Dec 2015          | -                  |                   | 0.200                                                               | Continuing              | Continuing        | Continuing                      |

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|-----------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------|--------------------|----------------|-------------------|-------------------------------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b>                                   |                                   |                                                                                |                    |                |                   |                                                                                                             |                   |                     |                   |                    |                   | <b>Date:</b> February 2015                                                 |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                    |                                   |                                                                                |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>L46 / <i>Maintenance Support Equipment</i> |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                         |                                   |                                                                                |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                       |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                      | <b>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> |
| <b>Subtotal</b>                                                                                     |                                   |                                                                                | 3.270              | 0.697          |                   | 0.749                                                                                                       |                   | 1.310               |                   | -                  |                   | 1.310                                                                      | -                       | -                 | -                               |
| <b>Support (\$ in Millions)</b>                                                                     |                                   |                                                                                |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                       |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                      | <b>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) | 0.743              | -              |                   | 0.122                                                                                                       | Jan 2015          | 0.102               | Dec 2015          | -                  |                   | 0.102                                                                      | 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)                                              | 1.182              | -              |                   | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                          | Continuing              | Continuing        | Continuing                      |
| Packaging Support                                                                                   | MIPR                              | ARDEC : Rock Island, IL                                                        | 0.000              | -              |                   | 0.132                                                                                                       | Jan 2015          | -                   |                   | -                  |                   | -                                                                          | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                     |                                   |                                                                                | 2.225              | -              |                   | 0.254                                                                                                       |                   | 0.102               |                   | -                  |                   | 0.102                                                                      | -                       | -                 | -                               |
| <b>Test and Evaluation (\$ in Millions)</b>                                                         |                                   |                                                                                |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                       |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                      | <b>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> |
| Further develop SATS Field Maintenance Module & viability of adding Load Handling System capability | MIPR                              | PM SKOT : Harrison, MI                                                         | 0.666              | 0.444          | Apr 2014          | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                          | Continuing              | Continuing        | Continuing                      |
| Procure and Test standalone support equipment items                                                 | MIPR                              | ATEC : Aberdeen, MD                                                            | 0.000              | 0.050          | Apr 2014          | -                                                                                                           |                   | -                   |                   | -                  |                   | -                                                                          | Continuing              | Continuing        | Continuing                      |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Army |                                   |                                           |                    |                |                   |                                                                                                             |                   |                     |                   |                                                                            |                   | <b>Date:</b> February 2015 |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                                   |                                           |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   | <b>Project (Number/Name)</b><br>L46 / <i>Maintenance Support Equipment</i> |                   |                            |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                       |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b>                                                         |                   | <b>FY 2016 Total</b>       |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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> |
| <b>Subtotal</b>                                                   |                                   |                                           | 0.666              | 0.494          |                   | -                                                                                                           |                   | -                   |                   | -                                                                          |                   | -                          | -                       | -                 | -                               |
|                                                                   |                                   |                                           | <b>Prior Years</b> | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                              |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b>                                                         |                   | <b>FY 2016 Total</b>       | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                        |                                   |                                           | 6.257              | 1.191          |                   | 1.003                                                                                                       |                   | 1.412               |                   | -                                                                          |                   | 1.412                      | -                       | -                 | -                               |
| <b>Remarks</b>                                                    |                                   |                                           |                    |                |                   |                                                                                                             |                   |                     |                   |                                                                            |                   |                            |                         |                   |                                 |



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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                            | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>L46 / <i>Maintenance Support Equipment</i> |                            |

Schedule Details

| Events                                                                       | Start   |      | End     |      |
|------------------------------------------------------------------------------|---------|------|---------|------|
|                                                                              | Quarter | Year | Quarter | Year |
| Redesign of Mobile Maintenance Equipment Shop Set of next generation vehicle | 1       | 2007 | 4       | 2020 |
| Develop, Procure and Test Special Tools for Additional Vehicles              | 1       | 2015 | 4       | 2020 |
| Develop Refrigeration Tool Kit and other Soldier Portable                    | 1       | 2015 | 4       | 2016 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |                |         |         |                 |                                                                                                  |                  |         |         |                                                                           | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5               |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>L47 / Improved Environmental Control Units<br>Ed |                     |                     |               |
| COST (\$ in Millions)                                   | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                                   | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| L47: Improved Environmental<br>Control Units Ed         | -              | 2.867   | -       | 0.976           | -                                                                                                | 0.976            | 1.468   | 1.970   | 3.865                                                                     | 2.199               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                              | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                                         | -                   |                     |               |

**Note**

Not applicable for this item.

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

The Improved Environmental Control Units (IECU) program will provide updates that support the new generation of Environmental Control Units (ECUs) that use environmentally approved refrigerants, with zero Ozone-Depleting Chemicals (ODCs) to replace the current Military Standard (MIL-STD) Family of 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 (such as HCFC-22) 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 Environmental Protection Agency (EPA) requirements (non-global warming). FY14 funding supports 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. In addition, the field has identified an emerging requirement for an integrated fuel-fired heating/cooling system. These 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. FY14 funding also supports continued evaluation of IECUs and variants at Network Integration Evaluation (NIE) to support new operational concepts. There are no FY15 base dollars. FY16 base dollars will be used to support development and test efforts for follow-on IECU systems.

**B. Accomplishments/Planned Programs (\$ in Millions)**

|                                                                                                                                                                                                                                                                                 | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|
| <b>Title:</b> Technology Development                                                                                                                                                                                                                                            | 1.000          | -              | 0.200          |
| <b>Description:</b> Engineering and Manufacturing Development (EMD) for 9/18/36K BTUH Improved Environmental Control Unit (IECU), multiple trailer-mounted variants and integrated heating/cooling systems.                                                                     |                |                |                |
| <b>FY 2014 Accomplishments:</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 and integrated heating/cooling units to meet emerging user needs. |                |                |                |
| <b>FY 2016 Plans:</b>                                                                                                                                                                                                                                                           |                |                |                |



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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                             | <b>Date:</b> February 2015                                                           |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>L47 / <i>Improved Environmental Control Units Ed</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                             | <b>FY 2014</b>                                                                       | <b>FY 2015</b> |
| Support continuing technology insertions and demonstration of prototypes for follow-on IECU variants.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                             |                                                                                      | <b>FY 2016</b> |
| <b>Title:</b> Government System Test and Evaluation<br><br><b>Description:</b> Testing for prototype performance for the trailer mounted variants of the Improved Environmental Control Units (IECUs).<br><br><b>FY 2014 Accomplishments:</b><br>Conduct reliability testing, Limited User Test, and logistics verification for trailer mounted variants to support type classification. Conduct performance tests on integrated heating/cooling units.<br><br><b>FY 2016 Plans:</b><br>Conduct performance tests on follow-on IECU systems.                                                                                                                                               |                                                                                                             | 0.678                                                                                | -              |
| <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 integrated heating/cooling units. Support Engineering and Manufacturing Development (EMD) effort on 9/18/36K Improved Environmental Control Unit (IECU) family.<br><br><b>FY 2014 Accomplishments:</b><br>Support engineering, logistics, and testing efforts for multiple trailer-mounted variants and integrated heating/cooling units. Support EMD effort on 9/18/36K IECU family.<br><br><b>FY 2016 Plans:</b><br>Support engineering, logistics, and testing efforts for follow-on IECU variants. |                                                                                                             | 0.991                                                                                | -              |
| <b>Title:</b> Government Program Management<br><br><b>Description:</b> Oversight and management of engineering, logistics, contracts, and testing efforts for 9/18/36 Improved Environmental Control Unit (IECU) family and multiple trailer-mounted variants. Transition to production. Provide oversight and management of integrated heating/cooling units.<br><br><b>FY 2014 Accomplishments:</b><br>Oversight and management of engineering, logistics, contracts, and testing efforts for 9/18/36 IECU family and multiple trailer-mounted variants. Transition to production. Provide oversight and management of integrated heating/cooling units.<br><br><b>FY 2016 Plans:</b>    |                                                                                                             | 0.198                                                                                | -              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                             |                                                                                      | 0.050          |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                | Date: February 2015         |                   |                |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |                         | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                          |                |                | Project (Number/Name)<br>L47 / Improved Environmental Control Units<br>Ed |                |                             |                   |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                | <b>FY 2014</b>              | <b>FY 2015</b>    | <b>FY 2016</b> |
| Oversight and management of engineering, logistics, contracts, and testing efforts for follow-on IECU variants.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                |                             |                   |                |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                | 2.867                       | -                 | 0.976          |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                |                             |                   |                |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016<br/>Base</b> | <b>FY 2016<br/>OCO</b>                                                                           | <b>FY 2016<br/>Total</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b>                                                            | <b>FY 2020</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |                |
| • MF9303: OPA 3,<br>Improved Environmental<br>Control Units , MF9303                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6.269          | 9.235          | 18.876                  | -                                                                                                | 18.876                   | 26.434         | 11.903         | 1.523                                                                     | 1.552          | Continuing                  | Continuing        |                |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                |                             |                   |                |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                |                             |                   |                |
| Complete Engineering and Manufacturing Development (EMD) for the 9/18/36K Improved Environmental Control Unit (IECU) variants and transition to production. Begin EMD for level efforts in support of multiple trailer-mounted IECU variants. The initial prototypes of the trailer-mounted variants will be assembled in house, with eventual production via depot-level integration of Government Furnished Equipment (GFE) from existing production contracts. Initial prototypes of the integrated fuel-fired heating and cooling systems will be procured via GFE and off-the-shelf components through third party vendors for assessment. This assessment will support development of a revised PD for eventual competitive procurement. Support technology insertions required to adapt IECUs to support future integrated Command Post heating and cooling requirements in support of Force 2025 and the Command Post ICD. Support development and evaluation of follow-on IECU variants. |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                |                             |                   |                |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                |                             |                   |                |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                |                         |                                                                                                  |                          |                |                |                                                                           |                |                             |                   |                |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army         |                              |                                                 |                |         |               |                                                                                                  |               |                 |               |                                                                           |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5                      |                              |                                                 |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>L47 / Improved Environmental Control Units<br>Ed |               |                     |                     |               |                                |
| Management Services (\$ in Millions)                           |                              |                                                 |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                            |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                             | Contract<br>Method<br>& Type | Performing<br>Activity & Location               | 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 Improved<br>Environmental Control Unit<br>(IECU)  | Various                      | PM E2S2 : various                               | 1.124          | 0.050   | Feb 2014      | -                                                                                                |               | -               |               | -                                                                         |               | -                   | -                   | 1.174         | Continuing                     |
| Trailer Variants                                               | Various                      | PM E2S2 : various                               | 0.433          | 0.073   | Feb 2014      | -                                                                                                |               | 0.025           | Dec 2015      | -                                                                         |               | 0.025               | -                   | 0.531         | Continuing                     |
| 18K Vertical                                                   | Various                      | PM E2S2 : various                               | 0.000          | 0.050   | Feb 2014      | -                                                                                                |               | -               |               | -                                                                         |               | -                   | -                   | 0.050         | -                              |
| Integrated heating/cooling<br>units                            | Various                      | PM E2S2 : various                               | 0.000          | 0.025   | Feb 2014      | -                                                                                                |               | 0.025           | Dec 2015      | -                                                                         |               | 0.025               | -                   | 0.050         | -                              |
| SBIR/STTR                                                      | Various                      | various : various                               | 0.137          | -       |               | -                                                                                                |               | -               |               | -                                                                         |               | -                   | -                   | 0.137         | -                              |
| Subtotal                                                       |                              |                                                 | 1.694          | 0.198   |               | -                                                                                                |               | 0.050           |               | -                                                                         |               | 0.050               | -                   | 1.942         | -                              |
| Product Development (\$ in Millions)                           |                              |                                                 |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                            |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                             | Contract<br>Method<br>& Type | Performing<br>Activity & Location               | 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 Improved<br>Environmental Control Unit<br>(IECU) | C/CPFF                       | Mainstream<br>Engineering : Vero<br>Beach, FL   | 2.064          | -       |               | -                                                                                                |               | -               |               | -                                                                         |               | -                   | -                   | 2.064         | Continuing                     |
| Trailer Mounted variants                                       | MIPR                         | CERDEC Night<br>Vision Lab : Ft<br>Belvoir, VA  | 0.000          | 0.400   | Apr 2014      | -                                                                                                |               | 0.100           | Feb 2016      | -                                                                         |               | 0.100               | -                   | 0.500         | -                              |
| 18K Vertical                                                   | C/CPFF                       | TBD : TBD                                       | 1.685          | 0.400   | Apr 2014      | -                                                                                                |               | -               |               | -                                                                         |               | -                   | -                   | 2.085         | -                              |
| Integrated heating/cooling<br>units                            | MIPR                         | CERDEC Night<br>Vision Lab : Ft.<br>Belvoir, VA | 0.000          | 0.200   | Apr 2014      | -                                                                                                |               | 0.100           | Feb 2016      | -                                                                         |               | 0.100               | -                   | 0.300         | -                              |
| Subtotal                                                       |                              |                                                 | 3.749          | 1.000   |               | -                                                                                                |               | 0.200           |               | -                                                                         |               | 0.200               | -                   | 4.949         | -                              |
|                                                                |                              |                                                 |                |         |               |                                                                                                  |               |                 |               |                                                                           |               |                     |                     |               |                                |

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|-------------------------------------------------------------------|-----------------------------------|-------------------------------------------|--------------------|----------------|-------------------|------------------------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|-------------------------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Army</b> |                                   |                                           |                    |                |                   |                                                                                                      |                   |                     |                   |                    |                   | <b>Date:</b> February 2015                                                    |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                                   |                                           |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / Logistics and Engineer Equipment - Eng Dev |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>L47 / Improved Environmental Control Units Ed |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                   |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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 Improved Environmental Control Unit (IECU)          | MIPR                              | CERDEC : Fort Belvoir, VA                 | 1.642              | 0.475          | Dec 2013          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                             | -                       | 2.117             | -                               |
| 18K Vertical                                                      | Various                           | CERDEC : Fort Belvoir, VA                 | 3.507              | 0.175          | Dec 2013          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                             | -                       | 3.682             | -                               |
| Trailer variants                                                  | MIPR                              | CERDEC : Fort Belvoir, VA                 | 0.344              | 0.276          | Dec 2013          | -                                                                                                    |                   | 0.300               | Feb 2016          | -                  |                   | 0.300                                                                         | -                       | 0.920             | -                               |
| Integrated heating/cooling units                                  | MIPR                              | CERDEC : Fort Belvoir, VA                 | 0.000              | 0.065          | Dec 2013          | -                                                                                                    |                   | 0.326               | Feb 2016          | -                  |                   | 0.326                                                                         | -                       | 0.391             | -                               |
| <b>Subtotal</b>                                                   |                                   |                                           | 5.493              | 0.991          |                   | -                                                                                                    |                   | 0.626               |                   | -                  |                   | 0.626                                                                         | -                       | 7.110             | -                               |
| <b>Test and Evaluation (\$ in Millions)</b>                       |                                   |                                           |                    | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>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 Improved Environmental Control Unit (IECU)           | MIPR                              | ATEC : APG, MD                            | 0.300              | 0.178          | Apr 2014          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                             | -                       | 0.478             | -                               |
| Trailer Variants                                                  | MIPR                              | ATEC : APG, MD                            | 0.199              | 0.150          | Apr 2014          | -                                                                                                    |                   | 0.025               | Feb 2016          | -                  |                   | 0.025                                                                         | -                       | 0.374             | Continuing                      |
| 18K Vertical                                                      | MIPR                              | ATEC : APG, MD                            | 0.000              | 0.200          | Apr 2014          | -                                                                                                    |                   | -                   |                   | -                  |                   | -                                                                             | -                       | 0.200             | -                               |
| Integrated heating/cooling units                                  | MIPR                              | ATEC : APG, MD                            | 0.000              | 0.150          | Apr 2014          | -                                                                                                    |                   | 0.075               | Feb 2016          | -                  |                   | 0.075                                                                         | -                       | 0.225             | -                               |
| <b>Subtotal</b>                                                   |                                   |                                           | 0.499              | 0.678          |                   | -                                                                                                    |                   | 0.100               |                   | -                  |                   | 0.100                                                                         | -                       | 1.277             | -                               |
|                                                                   |                                   |                                           | <b>Prior Years</b> | <b>FY 2014</b> |                   | <b>FY 2015</b>                                                                                       |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b>                                                          | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                        |                                   |                                           | 11.435             | 2.867          |                   | -                                                                                                    |                   | 0.976               |                   | -                  |                   | 0.976                                                                         | -                       | 15.278            | -                               |
| <b>Remarks</b>                                                    |                                   |                                           |                    |                |                   |                                                                                                      |                   |                     |                   |                    |                   |                                                                               |                         |                   |                                 |

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| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army                 |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   | Date: February 2015 |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|----------------------------------------------------------|---|---|---------|---|---|---------------------|---------|---|---|-----------------------------------------------|---------|---|---|---|---------|---|---|---|--|--|--|--|--|--|--|--|
| Appropriation/Budget Activity                                     |         |   |   |   |         |   |   |   |         | R-1 Program Element (Number/Name)                        |   |   |         |   |   |                     |         |   |   | Project (Number/Name)                         |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| 2040 / 5                                                          |         |   |   |   |         |   |   |   |         | PE 0604804A / Logistics and Engineer Equipment - Eng Dev |   |   |         |   |   |                     |         |   |   | L47 / Improved Environmental Control Units Ed |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Event Name                                                        | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |                                                          |   |   | FY 2017 |   |   |                     | FY 2018 |   |   |                                               | FY 2019 |   |   |   | FY 2020 |   |   |   |  |  |  |  |  |  |  |  |
|                                                                   | 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 |  |  |  |  |  |  |  |  |
| 9, 18 and 36K BTU/H IECU                                          |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| LRIP/TC Std/FMR Work                                              |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| (1) Full Rate Production Decision                                 | 1       |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Trailer Variants IECU                                             |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Test Phase                                                        |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| (2) Production Readiness Review                                   | 2       |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Integrated Heating/Cooling Units                                  |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Test Systems                                                      |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Develop PD                                                        |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Follow-on IECU Variants                                           |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Assess Technologies to Meet Gaps                                  |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Test Technologies to Meet Gaps                                    |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     |         |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| (3) Complete Proof of Principle Prototype (Commercial Components) |         |   |   |   |         |   |   |   |         |                                                          |   |   |         |   |   |                     | 3       |   |   |                                               |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |

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|---------------------------------------------------------|--|--|--|--|--|--|--|--|--|--------------------------------------------------------------------------------------------------|---|---|---|---------|---|---------------------|---|---------------------------------------------------------------------------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army       |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   | Date: February 2015 |   |                                                                           |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Appropriation/Budget Activity<br>2040 / 5               |  |  |  |  |  |  |  |  |  | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |   |   |   |         |   |                     |   | Project (Number/Name)<br>L47 / Improved Environmental Control Units<br>Ed |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Event Name                                              |  |  |  |  |  |  |  |  |  | FY 2014                                                                                          |   |   |   | FY 2015 |   |                     |   | FY 2016                                                                   |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |
|                                                         |  |  |  |  |  |  |  |  |  | 1                                                                                                | 2 | 3 | 4 | 1       | 2 | 3                   | 4 | 1                                                                         | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| (1) Complete Test and Evaluation                        |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   | ▲1                                                                        |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| (2) Fabricate Ruggedized Versions                       |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   | ▲2                                                                        |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| (3) Transfer to Engineering Change Proposals            |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   | ▲3                                                                        |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| (4) Preliminary Design Review - Follow-on IECU Variants |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   | ▲4                                                                        |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Fabrication Variants                                    |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   | ■                                                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| MTOE Changes                                            |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   | ■                                                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Integrated Command Post ECU Solutions for Force 2025    |  |  |  |  |  |  |  |  |  |                                                                                                  |   |   |   |         |   |                     |   | ■                                                                         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                                      | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>L47 / <i>Improved Environmental Control Units Ed</i> |                            |

**Schedule Details**

| Events                                                        | Start   |      | End     |      |
|---------------------------------------------------------------|---------|------|---------|------|
|                                                               | Quarter | Year | Quarter | Year |
| 9, 18 and 36K BTU/H IECU                                      | 1       | 2009 | 4       | 2015 |
| LRIP/TC Std/FMR Work                                          | 2       | 2013 | 2       | 2014 |
| Full Rate Production Decision                                 | 2       | 2014 | 2       | 2014 |
| Trailer Variants IECU                                         | 1       | 2013 | 4       | 2014 |
| Test Phase                                                    | 3       | 2013 | 2       | 2014 |
| Production Readiness Review                                   | 2       | 2014 | 2       | 2014 |
| Integrated Heating/Cooling Units                              | 1       | 2013 | 4       | 2014 |
| Test Systems                                                  | 1       | 2014 | 3       | 2014 |
| Develop PD                                                    | 3       | 2014 | 4       | 2014 |
| Follow-on IECU Variants                                       | 1       | 2017 | 4       | 2019 |
| Assess Technologies to Meet Gaps                              | 1       | 2016 | 4       | 2017 |
| Test Technologies to Meet Gaps                                | 1       | 2016 | 4       | 2017 |
| Complete Proof of Principle Prototype (Commercial Components) | 4       | 2016 | 4       | 2016 |
| Complete Test and Evaluation                                  | 2       | 2017 | 2       | 2017 |
| Fabricate Ruggedized Versions                                 | 3       | 2017 | 3       | 2017 |
| Transfer to Engineering Change Proposals                      | 4       | 2017 | 4       | 2017 |
| Preliminary Design Review - Follow-on IECU Variants           | 1       | 2018 | 1       | 2018 |
| Fabrication Variants                                          | 1       | 2018 | 2       | 2018 |
| MTOE Changes                                                  | 3       | 2018 | 3       | 2019 |
| Integrated Command Post ECU Solutions for Force 2025          | 1       | 2018 | 4       | 2020 |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------|------------------|---------|---------|---------------------------------------------------------------|---------------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |         |         |                 |                                                                                                  |                  |         |         |                                                               | Date: February 2015 |                     |               |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | Project (Number/Name)<br>VR7 / Combat Service Support Systems |                     |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Prior<br>Years | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018 | FY 2019                                                       | FY 2020             | Cost To<br>Complete | Total<br>Cost |
| VR7: Combat Service Support<br>Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -              | 4.405   | 2.945   | 2.963           | -                                                                                                | 2.963            | 4.574   | 4.354   | 2.598                                                         | 3.077               | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -              | -       | -       | -               | -                                                                                                | -                | -       | -       | -                                                             | -                   |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |         |         |                 |                                                                                                  |                  |         |         |                                                               |                     |                     |               |
| This project supports the Engineering and Manufacturing Development (EMD) 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, improve resource and energy efficiency 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |         |         |                 |                                                                                                  |                  |         |         | FY 2014                                                       | FY 2015             | FY 2016             |               |
| Title: Expeditionary Shelter Protection System (ESPS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |         |         |                 |                                                                                                  |                  |         |         | -                                                             | 0.550               | 0.861               |               |
| Description: ESPS is a lightweight, rapidly deployable and reusable ballistic protection system that can be integrated with 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |         |                 |                                                                                                  |                  |         |         |                                                               |                     |                     |               |
| FY 2015 Plans:<br>Award EMD contract, procure test items and initiate logistics requirements for ESPS to support transition to production.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |         |                 |                                                                                                  |                  |         |         |                                                               |                     |                     |               |
| FY 2016 Plans:<br>Complete EMD testing, logistics requirements and initiate Milestone C documentation for ESPS to support transition into production in FY17.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |         |                 |                                                                                                  |                  |         |         |                                                               |                     |                     |               |
| Title: Family of Space Heaters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |         |                 |                                                                                                  |                  |         |         | 0.150                                                         | 0.150               | 0.150               |               |
| Description: 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 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |         |         |                 |                                                                                                  |                  |         |         |                                                               |                     |                     |               |



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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                  | Date: February 2015                                           |         |         |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>VR7 / Combat Service Support Systems |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                  | FY 2014                                                       | FY 2015 | FY 2016 |
| <b>FY 2014 Accomplishments:</b><br>Completed Improved Army Space Heater (IASH) Type II prototype and conducted Developmental Test (DT). Prepared performance based specification.<br><b>FY 2015 Plans:</b><br>Complete contract documentation, award contract, procure test items and initiate Production Qualification Testing (PQT) for IASH Type II.<br><b>FY 2016 Plans:</b><br>Complete PQT, logistics requirements, and prepare Type Classification documentation for IASH Type II to support transition to production in FY17.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |                                                               |         |         |
| <b>Title:</b> Net-Zero Energy Efficiency Solutions<br><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, material and power requirements to sustain operations in the field. Effort includes reducing site preparation, sustainment, maintenance and spare parts requirements. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an enormous amount of by products, both of which cost money, human effort (that means a risk in the form of soldiers on the road), and represents a potential vulnerability.<br><b>FY 2014 Accomplishments:</b><br>Conduct OT on Force Provider 150-Soldier module with integrated Advanced Medium-sized Mobile Power Source (AMMPS). Completed evaluation on waste reduction technologies, energy saving solar shades, insulating liners, and power grid reconfiguration.<br><b>FY 2015 Plans:</b><br>Conduct evaluation on Net-Zero energy efficiency solutions for Force Provider. Initiate DT/OT on Force Provider resource and energy efficient Rigid-Wall Shelter Based 150-Soldier Module with integrated state-of-the-art energy saving appliances and mature expeditionary shelter energy efficiency upgrades. Conduct technical testing on solar hot water heating and mature expeditionary shelter energy efficiency upgrades. Transition proven and validated capabilities into full-rate production.<br><b>FY 2016 Plans:</b><br>Conduct evaluation on Net-Zero energy efficiency solutions for Force Provider. Complete DT/OT on Force Provider Resource and Energy Efficient Rigid-Wall Shelter based 150-Soldier module with integrated state-of-the-art energy saving appliances and mature expeditionary shelter energy efficiency upgrades. Transition Rigid-Wall Shelter camp into production. Complete DT on |                                                                                                  | 1.055                                                         | 1.980   | 0.740   |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                             | <b>Date:</b> February 2015                                                  |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>VR7 / <i>Combat Service Support Systems</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                             | <b>FY 2014</b>                                                              | <b>FY 2015</b> | <b>FY 2016</b> |
| Force Provider 150-Soldier module with integrated Advanced Medium-sized Mobile Power Source (AMMPS) microgrid. Transition proven and validated capabilities into full-rate production.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                             |                                                                             |                |                |
| <b>Title:</b> Laundry System Improvement<br><br><b>Description:</b> Provides an enhanced capability for field laundry with improved hot and cold weather performance, better compatibility with current and future combat clothing, and increased reliability, maintainability and ease of operation.<br><br><b>FY 2015 Plans:</b><br>Develop test prototypes of key laundry subsystems incorporating component replacements and upgrades to address identified field problems and equipment issues.<br><br><b>FY 2016 Plans:</b><br>Conduct Developmental Testing (DT) on prototype subsystems and components. Prepare Technical Data Packages (TDP) for modification kits and transition into production.                                                                                                                                                   |                                                                                                             | -                                                                           | 0.265          | 0.225          |
| <b>Title:</b> Solid Waste Disposal for Small Base Camps<br><br><b>Description:</b> Provides an integrated waste management (reduction, treatment or disposal process) add-on capability that can safely process 1,000 lbs or more of mixed solid waste in a single day on site. Mixed solid waste produced on a single 150 person site must be properly managed through reduction, reuse, recycling, treatment, or disposal. Most of the waste is nonhazardous solid waste. Provides a substantial improvement over the current practice of burn pits that poses a health risk to Soldiers and/or the backhaul logistics burden.<br><br><b>FY 2016 Plans:</b><br>Complete Milestone B (MS B) for the Solid Waste Disposal Systems and obtain required environmental permits for test and operation. Prepare prototype and conduct Developmental Testing (DT). |                                                                                                             | -                                                                           | -              | 0.685          |
| <b>Title:</b> Containerized Ice Making System<br><br><b>Description:</b> Develops an add-on ice making capability that automatically dispenses and seals 10 lbs bags at a rate of a minimum of 3,600 pounds of ice per day. This capability is based upon Army current operational requirements for ice which is four pounds per Soldier per day. This capability enables support for up to 900 personnel. Current operations require external support to provide personnel with ice for cooling drinking water in extremely arid environments. This capability will reduce the sustainment risk and cost associated with transporting this commodity from external sources. The objective requirement enables stockage of ice to assist with surge operations.<br><br><b>FY 2016 Plans:</b>                                                                  |                                                                                                             | -                                                                           | -              | 0.302          |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 |                                                                                                  |                  |         | Date: February 2015                                           |         |         |                     |            |
| Appropriation/Budget Activity<br>2040 / 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                  |         | Project (Number/Name)<br>VR7 / Combat Service Support Systems |         |         |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |         |                 |                                                                                                  |                  |         | FY 2014                                                       | FY 2015 | FY 2016 |                     |            |
| Award contract for development of test prototype Containerized Ice Making Systems and conduct Developmental Testing (DT).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 |                                                                                                  |                  |         |                                                               |         |         |                     |            |
| Title: Contingency Basing Infrastructure (CBI)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |         |                 |                                                                                                  |                  |         | 3.200                                                         | -       | -       |                     |            |
| Description: Provide systems engineering support to contingency base camp infrastructure; support investment decisions; support materiel recommendations responsive to operational commander needs; establish and deliver a standardized CBI set of systems as a capability; provide Doctrine, Organization, Training, Materiel, Leadership and education, Personnel, Facilities, and Policy (DOTMLPF-P) considerations for operational requirements and to improve mission effectiveness and efficiency.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 |                                                                                                  |                  |         |                                                               |         |         |                     |            |
| FY 2014 Accomplishments:<br>Continued to develop the tool set and knowledge base that will ultimately provide theater commanders with the information and recommendations to make optimal materiel choices and identify any impacts. Executed an Integrated System Requirements Review (I-SRR) for the development of the Contingency Base Interface to the Warfighter (CBIWar). Developed a new Desktop Analysis Tool based on MS Excel that enables base camp system definition and resource consumption estimates to be produced very quickly and efficiently using a common desktop computer. Developed new analytical capability for optimizing base camp designs by adapting a proven Whole System Trade Analysis Tool (WSTAT) previously developed and used for Ground Combat Vehicles to assess base camps. Expanded the capability/utilization of the System of Systems Analysis Toolset (SoSAT) for base camp analysis. Developed a base camp cluster model for an Infantry Brigade Combat Team to assess the impacts of individual system trades across a Ground Line of Communications cluster consisting of one medium base camp, five small base camps and twelve extra-small base camps. Conducted assessments of base camp system portfolios to define candidate systems found in current operational base camps. These candidate systems comprise the current base camp Materiel Baseline. Ongoing efforts will utilize these candidate systems to create base camp cluster models from which base camp performance improvements/ efficiencies can be measured. Program transitions to Budget Activity 654715 EC9 in FY15. |         |         |                 |                                                                                                  |                  |         |                                                               |         |         |                     |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |         |                 |                                                                                                  |                  |         | 4.405                                                         | 2.945   | 2.963   |                     |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |         |                 |                                                                                                  |                  |         |                                                               |         |         |                     |            |
| Line Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | FY 2014 | FY 2015 | FY 2016<br>Base | FY 2016<br>OCO                                                                                   | FY 2016<br>Total | FY 2017 | FY 2018                                                       | FY 2019 | FY 2020 | Cost To<br>Complete | Total Cost |
| • 643804 VR8: Combat<br>Service Support Systems AD,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1.558   | 2.690   | 4.048           | -                                                                                                | 4.048            | 4.654   | 4.557                                                         | 2.566   | 3.020   | Continuing          | Continuing |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 |                                                                                                  |                  |         |                                                               |         |         |                     |            |
| D. Acquisition Strategy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 |                                                                                                  |                  |         |                                                               |         |         |                     |            |
| Accelerate product development and testing to transition into production.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 |                                                                                                  |                  |         |                                                               |         |         |                     |            |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |                                                                                                  | Date: February 2015                                           |
| Appropriation/Budget Activity<br>2040 / 5               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev | Project (Number/Name)<br>VR7 / Combat Service Support Systems |
| E. Performance Metrics<br>N/A                           |                                                                                                  |                                                               |

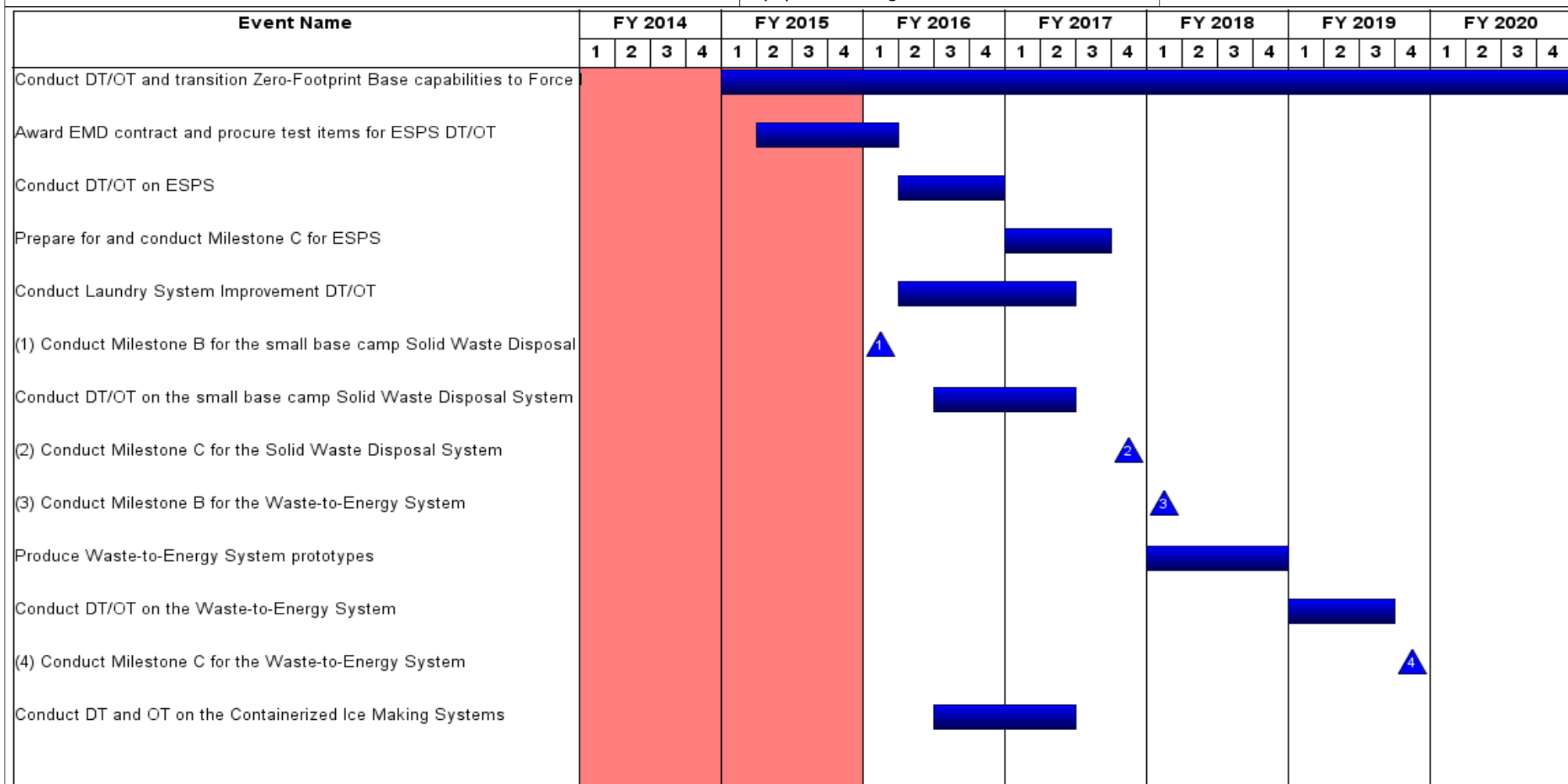
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|--------------------------------------------------------|------------------------------|-------------------------------------------------|----------------|---------|---------------|--------------------------------------------------------------------------------------------------|---------------|-----------------|---------------|---------------------------------------------------------------|---------------|---------------------|---------------------|---------------|--------------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army |                              |                                                 |                |         |               |                                                                                                  |               |                 |               |                                                               |               | Date: February 2015 |                     |               |                                |
| Appropriation/Budget Activity<br>2040 / 5              |                              |                                                 |                |         |               | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | Project (Number/Name)<br>VR7 / Combat Service Support Systems |               |                     |                     |               |                                |
| Management Services (\$ in Millions)                   |                              |                                                 |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location               | 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 |
| Project Management<br>Support                          | Various                      | PM Force<br>Sustainment<br>Systems : Natick, MA | 0.322          | 0.137   | Mar 2014      | 0.262                                                                                            |               | 0.366           |               | -                                                             |               | 0.366               | Continuing          | Continuing    | -                              |
| CBI Support                                            | Various                      | PD CBI : Warren, MI                             | 3.284          | 0.463   |               | -                                                                                                |               | -               |               | -                                                             |               | -                   | -                   | 3.747         | -                              |
| SBIR+STTR                                              | TBD                          | Various : Various                               | 0.077          | -       |               | -                                                                                                |               | -               |               | -                                                             |               | -                   | -                   | 0.077         | -                              |
| Subtotal                                               |                              |                                                 | 3.683          | 0.600   |               | 0.262                                                                                            |               | 0.366           |               | -                                                             |               | 0.366               | -                   | -             | -                              |
| Product Development (\$ in Millions)                   |                              |                                                 |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location               | 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 |
| Soldier Support Equipment                              | TBD                          | Various : Various                               | 2.143          | 0.453   | May 2014      | 1.138                                                                                            |               | 1.017           |               | -                                                             |               | 1.017               | Continuing          | Continuing    | -                              |
| Contingency Basing<br>Infrastructure                   | Various                      | Various : Various                               | 0.000          | 1.531   |               | -                                                                                                |               | -               |               | -                                                             |               | -                   | -                   | 1.531         | -                              |
| Subtotal                                               |                              |                                                 | 2.143          | 1.984   |               | 1.138                                                                                            |               | 1.017           |               | -                                                             |               | 1.017               | -                   | -             | -                              |
| Test and Evaluation (\$ in Millions)                   |                              |                                                 |                | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                |               | FY 2016<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location               | 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 |
| Soldier Support Equipment                              | Various                      | Various : Various                               | 1.668          | 0.615   | Mar 2014      | 1.545                                                                                            |               | 1.580           |               | -                                                             |               | 1.580               | Continuing          | Continuing    | -                              |
| Contingency Basing<br>Infrastructure                   | Various                      | Various : Various                               | 0.000          | 1.206   |               | -                                                                                                |               | -               |               | -                                                             |               | -                   | -                   | 1.206         | -                              |
| Subtotal                                               |                              |                                                 | 1.668          | 1.821   |               | 1.545                                                                                            |               | 1.580           |               | -                                                             |               | 1.580               | -                   | -             | -                              |
|                                                        |                              |                                                 | Prior<br>Years | FY 2014 |               | FY 2015                                                                                          |               | FY 2016<br>Base |               | FY 2016<br>OCO                                                |               | FY 2016<br>Total    | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Project Cost Totals                                    |                              |                                                 | 7.494          | 4.405   |               | 2.945                                                                                            |               | 2.963           |               | -                                                             |               | 2.963               | -                   | -             | -                              |
| Remarks                                                |                              |                                                 |                |         |               |                                                                                                  |               |                 |               |                                                               |               |                     |                     |               |                                |

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army** **Date:** February 2015

|                                                  |                                                                                                             |                                                                             |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</b><br>VR7 / <i>Combat Service Support Systems</i> |
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|-------------------------------------------------------------------------|---------|---|---|---|---------|---|---|--------------------------------------------------------------------------------------------------|---------|---|---|---|---------|----|----|---------------------------------------------------------------|---------|---|---|----|---------|---|---|---|---------|---|----|----|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army                       |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    | Date: February 2015                                           |         |   |   |    |         |   |   |   |         |   |    |    |
| Appropriation/Budget Activity<br>2040 / 5                               |         |   |   |   |         |   |   | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |         |   |   |   |         |    |    | Project (Number/Name)<br>VR7 / Combat Service Support Systems |         |   |   |    |         |   |   |   |         |   |    |    |
| Event Name                                                              | FY 2014 |   |   |   | FY 2015 |   |   |                                                                                                  | FY 2016 |   |   |   | FY 2017 |    |    |                                                               | FY 2018 |   |   |    | FY 2019 |   |   |   | FY 2020 |   |    |    |
|                                                                         | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4                                                                                                | 1       | 2 | 3 | 4 | 1       | 2  | 3  | 4                                                             | 1       | 2 | 3 | 4  | 1       | 2 | 3 | 4 | 1       | 2 | 3  | 4  |
| (1) Complete MS C and transition Containerized Ice Making Systems into  |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    | ▲1                                                            |         |   |   |    |         |   |   |   |         |   |    |    |
| (2) Conduct Milestone B for the small base camp black waste elimination |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         | ▲2 |    |                                                               |         |   |   |    |         |   |   |   |         |   |    |    |
| Produce small base camp black waste elimination system prototypes       |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   |    |    |
| Conduct DT/OT on the small base camp black waste elimination system     |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   |    |    |
| (3) Conduct Milestone C for the small base camp black waste elimination |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   | ▲3 |         |   |   |   |         |   |    |    |
| (4) Conduct Milestone B for the HRTC2                                   |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   | ▲4 |         |   |   |   |         |   |    |    |
| Conduct DT/OT on the HRTC2                                              |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   |    |    |
| (5) Conduct Milestone C for the HRTC2                                   |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   |    | ▲5 |
| (6) Conduct MS B for black waste elimination system for large base camp |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   | ▲6 |    |
| (7) Conduct Milestone B for the Family of Vehicle Mounted Rigid Wall St |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    | ▲7 |                                                               |         |   |   |    |         |   |   |   |         |   |    |    |
| Conduct DT/OT on the Family of Vehicle Mounted RWS                      |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   |    |    |
| (8) Conduct Milestone B for the Family of Expandable/Non-Expandable     |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   | ▲8 |    |
| Conduct DT/OT on the Family of Expandable/Non-Expandable ISO            |         |   |   |   |         |   |   |                                                                                                  |         |   |   |   |         |    |    |                                                               |         |   |   |    |         |   |   |   |         |   |    |    |

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|------------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|--------------------------------------------------------------------------------------------------|---|---|---------|---|---|---------------------|---------|---------------------------------------------------------------|---|---|---------|---|---|---|---------|---|---|---|--|--|--|--|--|--|--|--|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army                      |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   | Date: February 2015 |         |                                                               |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Appropriation/Budget Activity<br>2040 / 5                              |         |   |   |   |         |   |   |   |         | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |   |   |         |   |   |                     |         | Project (Number/Name)<br>VR7 / Combat Service Support Systems |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Event Name                                                             | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |                                                                                                  |   |   | FY 2017 |   |   |                     | FY 2018 |                                                               |   |   | FY 2019 |   |   |   | FY 2020 |   |   |   |  |  |  |  |  |  |  |  |
|                                                                        | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2                                                                                                | 3 | 4 | 1       | 2 | 3 | 4                   | 1       | 2                                                             | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |  |  |  |  |  |  |  |  |
| (1) Conduct Milestone B for the Family of Collapsible and Panelized RW |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                               |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Develop ULCANS arctic/snow variant and conduct DT/OT                   |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                               |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Develop ULCANS urban variant and conduct DT/OT                         |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                               |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Develop ESPS Overhead Protection System and conduct DT and OT          |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                               |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Award EMD contract and conduct PQT for IASH Type II                    |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                               |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |
| Complete PQT and prepare TC-STD documentation for IASH Type II         |         |   |   |   |         |   |   |   |         |                                                                                                  |   |   |         |   |   |                     |         |                                                               |   |   |         |   |   |   |         |   |   |   |  |  |  |  |  |  |  |  |



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|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army |                                                                                                             |                                                                             | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604804A / <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>Project (Number/Name)</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 DT/OT and transition Zero-Footprint Base capabilities to Force Provider. | 1              | 2015        | 4              | 2020        |
| Award EMD contract and procure test items for ESPS DT/OT                         | 2              | 2015        | 1              | 2016        |
| Conduct DT/OT on ESPS                                                            | 2              | 2016        | 4              | 2016        |
| Prepare for and conduct Milestone C for ESPS                                     | 1              | 2017        | 3              | 2017        |
| Conduct Laundry System Improvement DT/OT                                         | 2              | 2016        | 2              | 2017        |
| Conduct Milestone B for the small base camp Solid Waste Disposal System          | 1              | 2016        | 1              | 2016        |
| Conduct DT/OT on the small base camp Solid Waste Disposal System                 | 3              | 2016        | 2              | 2017        |
| Conduct Milestone C for the Solid Waste Disposal System                          | 4              | 2017        | 4              | 2017        |
| Conduct Milestone B for the Waste-to-Energy System                               | 1              | 2018        | 1              | 2018        |
| Produce Waste-to-Energy System prototypes                                        | 1              | 2018        | 4              | 2018        |
| Conduct DT/OT on the Waste-to-Energy System                                      | 1              | 2019        | 3              | 2019        |
| Conduct Milestone C for the Waste-to-Energy System                               | 4              | 2019        | 4              | 2019        |
| Conduct DT and OT on the Containerized Ice Making Systems                        | 3              | 2016        | 2              | 2017        |
| Complete MS C and transition Containerized Ice Making Systems into production    | 4              | 2017        | 4              | 2017        |
| Conduct Milestone B for the small base camp black waste elimination system       | 1              | 2017        | 1              | 2017        |
| Produce small base camp black waste elimination system prototypes                | 1              | 2017        | 3              | 2017        |
| Conduct DT/OT on the small base camp black waste elimination system              | 4              | 2017        | 2              | 2018        |
| Conduct Milestone C for the small base camp black waste elimination system       | 4              | 2018        | 4              | 2018        |
| Conduct Milestone B for the HRTC2                                                | 3              | 2018        | 3              | 2018        |
| Conduct DT/OT on the HRTC2                                                       | 1              | 2019        | 4              | 2019        |
| Conduct Milestone C for the HRTC2                                                | 2              | 2020        | 2              | 2020        |
| Conduct MS B for black waste elimination system for large base camps             | 1              | 2020        | 1              | 2020        |

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|                                                                                 |         |                                                                                                  |                     |                                                               |
|---------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------|
| Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army                              |         |                                                                                                  | Date: February 2015 |                                                               |
| Appropriation/Budget Activity<br>2040 / 5                                       |         | R-1 Program Element (Number/Name)<br>PE 0604804A / Logistics and Engineer<br>Equipment - Eng Dev |                     | Project (Number/Name)<br>VR7 / Combat Service Support Systems |
|                                                                                 | Start   |                                                                                                  | End                 |                                                               |
| Events                                                                          | Quarter | Year                                                                                             | Quarter             | Year                                                          |
| Conduct Milestone B for the Family of Vehicle Mounted Rigid Wall Shelters (RWS) | 2       | 2017                                                                                             | 2                   | 2017                                                          |
| Conduct DT/OT on the Family of Vehicle Mounted RWS                              | 2       | 2018                                                                                             | 2                   | 2019                                                          |
| Conduct Milestone B for the Family of Expandable/Non-Expandable ISO             | 1       | 2019                                                                                             | 1                   | 2019                                                          |
| Conduct DT/OT on the Family of Expandable/Non-Expandable ISO                    | 1       | 2019                                                                                             | 2                   | 2020                                                          |
| Conduct Milestone B for the Family of Collapsible and Panelized RWS             | 4       | 2020                                                                                             | 4                   | 2020                                                          |
| Develop ULCANS arctic/snow variant and conduct DT/OT                            | 1       | 2017                                                                                             | 2                   | 2018                                                          |
| Develop ULCANS urban variant and conduct DT/OT                                  | 3       | 2017                                                                                             | 4                   | 2019                                                          |
| Develop ESPS Overhead Protection System and conduct DT and OT                   | 1       | 2020                                                                                             | 4                   | 2021                                                          |
| Award EMD contract and conduct PQT for IASH Type II                             | 2       | 2015                                                                                             | 4                   | 2015                                                          |
| Complete PQT and prepare TC-STD documentation for IASH Type II                  | 1       | 2016                                                                                             | 4                   | 2016                                                          |