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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 I BA 7: Operational Systems Development |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0607135A I Apache Product Improvement Program |               |         |         |         |                     |                  |            |
| 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   | -           | -       | 86.099  | 69.862       | -   | 69.862        | 66.131  | 54.577  | 31.383  | 32.917              | -                | 340.969    |
| ES2: Apache Product Improvement Program   | -           | -       | 86.099  | 69.862       | -   | 69.862        | 66.131  | 54.577  | 31.383  | 32.917              | -                | 340.969    |

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

|   |                |                |                     |                    |                      |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| <b>B. Program Change Summary (\$ 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> |
| Previous President's Budget                       | -              | -              | -                   | -                  | -                    |
| Current President's Budget                        | -              | 86.099         | 69.862              | -                  | 69.862               |
| Total Adjustments                                 | -              | 86.099         | 69.862              | -                  | 69.862               |
| • Congressional General Reductions                | -              | -              |                     |                    |                      |
| • Congressional Directed Reductions               | -              | -              |                     |                    |                      |
| • Congressional Rescissions                       | -              | -              |                     |                    |                      |
| • Congressional Adds                              | -              | -              |                     |                    |                      |
| • Congressional Directed Transfers                | -              | -              |                     |                    |                      |
| • Reprogrammings                                  | -              | -              |                     |                    |                      |
| • SBIR/STTR Transfer                              | -              | -              |                     |                    |                      |
| • Adjustments to Budget Years                     | -              | 86.099         | 69.862              | -                  | 69.862               |

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|---|-------------|---------|---------|--------------|---|---------------|---------|---------|---|---------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army |             |         |         |              |   |               |         |         |   | Date: February 2015 |                  |            |
| Appropriation/Budget Activity<br>2040 / 7               |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0607135A / Apache Product Improvement Program |               |         |         | Project (Number/Name)<br>ES2 / Apache Product Improvement Program |                     |                  |            |
| 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 |
| ES2: Apache Product Improvement Program                 | -           | -       | 86.099  | 69.862       | -   | 69.862        | 66.131  | 54.577  | 31.383  | 32.917              | -                | 340.969    |
| Quantity of RDT&E Articles                              | -           | -       | -       | -            | -   | -             | -       | -       | -   | -                   |                  |            |

**Note**

For FY 2015 and all outyears, all funding for AH-64E was moved from PE 273744, Project D17 to PE 677135, Project ES2.

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

The FY 2016 budget request for Apache AH-64E, previously known as Apache Block III, will fund the non-recurring engineering (NRE), development, and testing work associated with the planned remanufacture and new build of 690 Apache aircraft in the AH-64E configuration (deliveries began in Oct 2011). The AH-64E - program consists of two Major Defense Acquisition Programs (MDAP), AH-64E Remanufacture and AH-64E New Build. This project also addresses obsolescence and reliability challenges and provides increased combat capability to the aircraft. Upgrades include: Unmanned Aircraft System (UAS) Level III-IV Control, Improved Situational Awareness, Upgraded Communications Suite, Improved Drive and Propulsion Systems, Improved Targeting Capability, Increased Computer Processing Capability and Speed, Improved Navigation Systems, and Improved Diagnostics and Maintainability. Upgrades are integrated as incremental block modifications. The program addresses operational shortfalls identified during real-world combat missions and meets Longbow Apache Capability Production Document (CPD) requirements for modernization.

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

|  |                |                |                |
|--|----------------|----------------|----------------|
| <b>Title:</b> Product Development  | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016</b> |
| <b>Description:</b> Funding is provided for the following efforts by Boeing, Longbow Limited Liability (LBL), and Lockheed Martin  | -              | 75.377         | 62.628         |
| <b>FY 2015 Plans:</b><br>Development, Integration & Testing work associated with the planned remanufacture and new build of Apache aircraft in the AH-64E Lot 6 configuration (joint interoperability, crashworthy fuel tank kits, embedded diagnostics, communications, mission processor, and navigation upgrades) and to enhance operational capabilities. Risk reduction for Version 6 CPD capabilities to include cognitive decision aiding, soldier radio waveform, modernized dayside assembly, modernized radio frequency interferometer, maritime targeting, and radar upgrades. Provides NRE for design of the Hydra Launcher Electronics Assembly for development of the MRL. |                |                |                |
| <b>FY 2016 Plans:</b>  |                |                |                |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army  |  |   | Date: February 2015   |         |         |
| Appropriation/Budget Activity<br>2040 / 7  |  | R-1 Program Element (Number/Name)<br>PE 0607135A / Apache Product Improvement Program | Project (Number/Name)<br>ES2 / Apache Product Improvement Program |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions)   |  |   | FY 2014   | FY 2015 | FY 2016 |
| Development, Integration & Testing work associated with the planned remanufacture and new build of Apache aircraft in the AH-64E Capability Version 6 configuration (cognitive decision aiding, soldier radio waveform, modernized dayside assembly, modernized radio frequency interferometer, maritime targeting, and radar upgrades) and to enhance operational capabilities. |  |   |   |         |         |
| Title: Support Costs   |  |   | -   | 1.726   | 1.000   |
| Description: Funding is provided for the following effort.   |  |   |   |         |         |
| FY 2015 Plans:<br>GFE supporting Apache AH-64E tests and government R&D Facilities   |  |   |   |         |         |
| FY 2016 Plans:<br>GFE supporting Apache AH-64E tests and government R&D Facilities.  |  |   |   |         |         |
| Title: Test and Evaluation   |  |   | -   | 3.700   | 3.295   |
| Description: Funding is provided for Development Testing and Evaluation and Operational Test and Evaluation.   |  |   |   |         |         |
| FY 2015 Plans:<br>Funding is provided for Development Testing and Evaluation and Operational Test and Evaluation, Government test oversight, test ranges, flight hour costs for MRL testing.   |  |   |   |         |         |
| FY 2016 Plans:<br>Funding is provided for Development Testing and Evaluation and Operational Test and Evaluation.  |  |   |   |         |         |
| Title: Management Services   |  |   | -   | 5.296   | 2.939   |
| Description: Funding is provided for the following effort: Payroll, TDY, Support Contractors, Matrix Support.  |  |   |   |         |         |
| FY 2015 Plans:<br>Funding is provided for the following effort: Payroll, TDY, Support Contractors, Matrix Support.   |  |   |   |         |         |
| FY 2016 Plans:<br>Funding is provided for the following effort: Payroll, TDY, Support Contractors, Matrix Support.   |  |   |   |         |         |
| Accomplishments/Planned Programs Subtotals   |  |   | -   | 86.099  | 69.862  |

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|--|---------|---------|-----------------|---|------------------|-----------|-----------|---|-----------|---------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2016 Army  |         |         |                 |   |                  |           |           |   |           | Date: February 2015 |            |
| Appropriation/Budget Activity<br>2040 / 7  |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0607135A / Apache Product Improvement Program |                  |           |           | Project (Number/Name)<br>ES2 / Apache Product Improvement Program |           |                     |            |
| 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 |
| • AH-64 Mods: AH-64 Mods   | 48.487  | 181.869 | 116.153         | -   | 116.153          | 133.846   | 177.919   | 145.955   | 134.063   | -                   | 938.292    |
| • AH-64 Apache Block IIIA Reman:<br>AH-64 Apache Block IIIA Reman  | 752.600 | 873.347 | 1,378.391       | -   | 1,378.391        | 1,074.191 | 1,264.377 | 1,138.097   | 1,132.134 | -                   | 7,613.137  |
| • AH-64 Apache Block<br>IIIB New Build: AH-64<br>Apache Block IIIB New Build   | 142.000 | -       | -               | -   | -                | -         | -         | -   | -         | -                   | 142.000    |
| Remarks  |         |         |                 |   |                  |           |           |   |           |                     |            |
| D. Acquisition Strategy  |         |         |                 |   |                  |           |           |   |           |                     |            |
| The NRE will encompass subsystem integration and will utilize existing test aircraft, incorporate the technical insertions, and initiate appropriate qualification and operational flight-testing.   |         |         |                 |   |                  |           |           |   |           |                     |            |
| In FY14, a contract for Apache AH-64E Lot 3, initiating Full Rate Production, is planned with options for Lot 4 and will continue to a total of 690 remanufactured and new build aircraft.   |         |         |                 |   |                  |           |           |   |           |                     |            |
| Training device concurrency will be maintained with each technical insertion. The EMD effort is managed as Cost Reimbursable. Production efforts will be awarded as Firm Fixed Price (FFP) and include the Advance Procurement requirements. |         |         |                 |   |                  |           |           |   |           |                     |            |
| In FY13, FY14, and FY15 MRL NRE will encompass US Government (USG) design of the Hydra Launcher Electronics Assembly (LEA), modification of the M261 launcher, launcher fabrication, and launcher testing.                                   |         |         |                 |   |                  |           |           |   |           |                     |            |
| In FY15-FY18, Apache AH-64E Development & Integration (D&I) Contract.  |         |         |                 |   |                  |           |           |   |           |                     |            |
| Multi-year authority may be requested for the out years.   |         |         |                 |   |                  |           |           |   |           |                     |            |
| E. Performance Metrics   |         |         |                 |   |                  |           |           |   |           |                     |            |
| 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 / 7                  |                                   |  |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0607135A / Apache Product Improvement Program |                   |                     |                   |                    |                   | <b>Project (Number/Name)</b><br>ES2 / Apache Product Improvement Program |                         |                   |                                 |
| <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> |
| Management Services (In-House, Travel, etc.)                      | MIPR                              | PMO AAH Matrix Support<br>AMCOM Express : Redstone Arsenal, AL | 0.000              | -              |                   | 5.296  |                   | 2.939               | Dec 2016          | -                  |                   | 2.939  | 3.480                   | 11.715            | -                               |
| <b>Subtotal</b>   |                                   |  | 0.000              | -              |                   | 5.296  |                   | 2.939               |                   | -                  |                   | 2.939  | 3.480                   | 11.715            | -                               |
| <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> |
| The Boeing Company  | SS/CPIF                           | Boeing Contracts : Mesa, AZ                                    | 0.000              | -              |                   | 54.377   | Apr 2015          | 55.024              | Dec 2016          | -                  |                   | 55.024   | -                       | 109.401           | -                               |
| Longbow Limited Liability (LBL) Contracts                         | SS/CPIF                           | Longbow Limited Liability (LBL) Contracts : Orlando, FL        | 0.000              | -              |                   | 9.000  |                   | 7.604               | Dec 2016          | -                  |                   | 7.604  | -                       | 16.604            | -                               |
| Ground Fire Acquisition Development (GFAD)                        | SS/CPIF                           | TBD : TBD  | 0.000              | -              |                   | 12.000   |                   | -                   |                   | -                  |                   | -  | -                       | 12.000            | -                               |
| <b>Subtotal</b>   |                                   |  | 0.000              | -              |                   | 75.377   |                   | 62.628              |                   | -                  |                   | 62.628   | -                       | 138.005           | -                               |
| <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> |
| Program Support Activities  | MIPR                              | Various : Various  | 0.000              | -              |                   | 1.726  |                   | 1.000               | Dec 2016          | -                  |                   | 1.000  | 1.568                   | 4.294             | -                               |
| <b>Subtotal</b>   |                                   |  | 0.000              | -              |                   | 1.726  |                   | 1.000               |                   | -                  |                   | 1.000  | 1.568                   | 4.294             | -                               |

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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 / 7                           |                                   |   |                    |                |                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0607135A / Apache Product Improvement Program |                   |                     |                   | <b>Project (Number/Name)</b><br>ES2 / Apache Product Improvement Program |                   |                      |                            |                   |                                 |
| <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> |
| Operational Assessments, Test Integration Working Group (TWIG), TEMP, etc. | MIPR                              | Various : Various                         | 0.000              | -              |                   | 3.700  |                   | 3.295               | Dec 2016          | -  |                   | 3.295                | 3.199                      | 10.194            | -                               |
| <b>Subtotal</b>  |                                   |   | 0.000              | -              |                   | 3.700  |                   | 3.295               |                   | -  |                   | 3.295                | 3.199                      | 10.194            | -                               |
|  |                                   |   | <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              | -              |                   | 86.099   |                   | 69.862              |                   | -  |                   | 69.862               | 8.247                      | 164.208           | -                               |
| <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 / 7         |  |  |  |  |  |  |  |  |  | R-1 Program Element (Number/Name)<br>PE 0607135A / Apache Product Improvement Program |   |   |   |         |   |   |                     |         |   | Project (Number/Name)<br>ES2 / Apache Product Improvement Program |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| 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 |
| NRE Contracts - Boeing                            |  |  |  |  |  |  |  |  |  | NRE Contracts - Boeing  |   |   |   |         |   |   |                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|   |  |  |  |  |  |  |  |  |  |   |   |   |   |         |   |   |                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army |  | Date: February 2015  |
| Appropriation/Budget Activity<br>2040 / 7          | R-1 Program Element (Number/Name)<br>PE 0607135A / Apache Product<br>Improvement Program | Project (Number/Name)<br>ES2 / Apache Product Improvement<br>Program |

Schedule Details

| Events                 | Start   |      | End     |      |
|------------------------|---------|------|---------|------|
|                        | Quarter | Year | Quarter | Year |
| NRE Contracts - Boeing | 1       | 2011 | 4       | 2017 |