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| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army | | | | | | | | | | Date: May 2017 | | | |
|---|-------------|---------|---------|--------------|--|---------------|---------|---------|---------|----------------|------------------|------------|--|
| Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development | | | | | R-1 Program Element (Number/Name) PE 0607865A / Patriot Product Improvement | | | | | | | | |
| COST (\$ in Millions) | Prior Years | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost | |
| Total Program Element | - | 87.537 | 49.482 | 90.217 | - | 90.217 | 69.976 | 41.973 | 62.928 | 80.407 | Continuing | Continuing | |
| DV8: Patriot Product Improvement | - | 87.537 | 49.482 | 90.217 | - | 90.217 | 69.976 | 41.973 | 62.928 | 80.407 | Continuing | Continuing | |

Note

Beginning FY17, funding specific to LTAMD-C realigned to PE 0604114A, Lower Tier Missile Defense (LTAMD) Capability.

A. Mission Description and Budget Item Justification

PATRIOT is an advanced Surface-to-Air guided missile system with a high probability of kill, capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by U.S. Forces. The PATRIOT Product Improvement Program provides for the upgrade of the PATRIOT System through individual materiel changes and upgrades to the PATRIOT system to address operational lessons learned, enhancements to joint force interoperability, and other system performance improvements to provide overmatch capability with the emerging threat.

The software funding provides improvements to the PATRIOT system against the evolving threat. This effort supports work with national agencies to evaluate, assess, and develop means to mitigate threat trends and specific threat developments potentially impacting system performance. Specific improvements may be developed and fielded under this task if warranted. The effort maintains the Mission Tailoring Database, responding to immediate tactical concerns. Database updates are fielded between major software upgrades as necessary.

Funding provides authority to identify, analyze, design and test materiel solutions to counter cybersecurity and electronic warfare shortcomings to all elements of the Patriot Air Defense Weapon System.

FY2018 base dollars in the amount of \$90.217 million continues Software Improvement for Threat Evolution, Upper Tier Debris Mitigation (UTDM), THAAD/PATRIOT Interoperability, Advanced Electronic Counter Measures (AECM), Anti-Radiation Missile (ARM) Asset Defense, Assured Positioning, Navigation and Timing (PNT), Combat ID enhancements, Tasks 2, 6, and 7 activities, and to reestablish Test Detachment. Initiates Tactical Telemetry Ground Station development and Radar Digital Processor (RDP) Waveform Suite in support of the PATRIOT Product Improvement Program (PIP). The FY2018 funding request was reduced by \$29.209 million to account for the availability of prior year execution balances.

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| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army | | | | Date: May 2017 | |
| Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 7: Operational Systems Development | | R-1 Program Element (Number/Name) PE 0607865A I Patriot Product Improvement | | | |
| B. Program Change Summary (\$ in Millions) | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
| Previous President's Budget | 89.816 | 49.482 | 119.426 | - | 119.426 |
| Current President's Budget | 87.537 | 49.482 | 90.217 | - | 90.217 |
| Total Adjustments | -2.279 | 0.000 | -29.209 | - | -29.209 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | - | - | | | |
| • Adjustments to Budget Years | -2.279 | 0.000 | -29.209 | - | -29.209 |

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| Exhibit R-2A, RDT&E Project Justification: FY 2018 Army | | | | | | | | | | Date: May 2017 | | |
|---|-------------|---------|---------|--------------|--|---------------|---------|---------|--|----------------|------------------|------------|
| Appropriation/Budget Activity 2040 / 7 | | | | | R-1 Program Element (Number/Name) PE 0607865A / Patriot Product Improvement | | | | Project (Number/Name) DV8 / Patriot Product Improvement | | | |
| COST (\$ in Millions) | Prior Years | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
| DV8: Patriot Product Improvement | - | 87.537 | 49.482 | 90.217 | - | 90.217 | 69.976 | 41.973 | 62.928 | 80.407 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

Note

Beginning FY17, funding specific to LTAMD-C realigned to PE 0604114A, Lower Tier Missile Defense (LTAMD) Capability.

A. Mission Description and Budget Item Justification

Software Improvements for threat evolution: Performs necessary analysis and development efforts to maintain PATRIOT system effectiveness against evolving threat technologies and specific threat capabilities. This effort identifies evolving threats and threat characteristics that might present a challenge to PATRIOT's current capabilities and develops initial concepts to maintain system effectiveness relative to these threats.

Upper-Tier Debris Mitigation (UTDM): Implements algorithms to mitigate system impacts of debris from Upper Tier intercepts associated with operating in the Ballistic Missile Defense System (BMDS) environment. Debris from Upper Tier intercepts can cause significant radar loading effects and the potential for erroneous engagements and missile wastage on debris.

RDP Waveform Suite: Develops a comprehensive set of waveforms in the RDP to improve PATRIOT radar capabilities against current and evolving threats, including support to Task 6 and 7 efforts (see below), and implements advanced data collection enabled by the RDP to support further system improvements. The RDP implementation allows significant radar waveform improvements necessary to counter evolving threats.

THAAD/PATRIOT Interoperability: Implements improvements to THAAD/PATRIOT Interoperability and addresses Joint Defense Network deficiencies that impact Tactical Ballistic Missile battle management and force/engagement operations. Efforts will be concentrated on joint, collaborative force operations (defense design and planning) and enhanced Tactical Digital Information Link - Joint interoperability.

Advanced Electronic Counter Measures (AECM): This task investigates the implications of advanced technology Digital Radio Frequency Memory available on airborne platforms that enables new ECM techniques which could adversely affect Air and Missile Defense System effectiveness.

Task 2: Implements improved ground system and interceptor capabilities (PATRIOT Advanced Capability-2/Guidance Enhanced Missiles, PATRIOT Advanced Capability-3, and Missile Segment Enhancement) to counter emerging Tactical Ballistic Missile threats.

Task 6: Software improvements enhance discrimination of higher altitude Tactical Ballistic Missile Re-entry Vehicles (RVs) from associated objects to support the full engagement capabilities of the interceptor. Longer-range detection, track, and improved high-altitude discrimination are required to achieve the required lethality

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| Appropriation/Budget Activity 2040 / 7 | R-1 Program Element (Number/Name) PE 0607865A / Patriot Product Improvement | Project (Number/Name) DV8 / Patriot Product Improvement | | |
| performance against the RV and to mitigate missile wastage against separation debris. This task leverages the signal processing capabilities of the Radar Digital Processor, and supports the high altitude engagements required by the PATRIOT Advanced Capability-3 (PAC-3) and PAC-3 Missile Segment Enhancement missiles. | | | | |
| Task 7: Software improvements analyze existing and evolving Tactical Ballistic Missile countermeasures and their effects on PATRIOT system effectiveness. Develops concepts to address countermeasure effects and ensure the PATRIOT system maintains its effectiveness. Develops detailed system requirements to implement concepts; design/code/test software implementation leveraging Radar Digital Processor, Modernized Adjunct Processor, Enhanced Weapons Control Computer - Emulator and Flight Solution Computer-Redesign processing capabilities. | | | | |
| Assured Positioning, Navigation, and Timing (PNT): Efforts will develop and test the military’s improved Global Position M-Code with Patriot Major End Items (MEI) integrating the improved anti-jamming and secure access of military GPS signals. This effort meets the requirement for Assured PNT through M-Code as mandated by FY2011 National Defense Act, public law 111-383 & 913. | | | | |
| Combat ID Enhancements: Develop and implement improvements to the Radar Digital Processor-Capability Combat ID capabilities and additional Non-Cooperative Target Recognition techniques to further mitigate misclassification and fratricide risk, and to provide the Warfighter with improved situational awareness. | | | | |
| Flat Panel Array Concept Development: This task provides studies for initial concepts and performance capabilities related to the implementation of an Active Electronically Scanned Array (AESA) transmitter/antenna into the PATRIOT radar. These assessments are needed to refine user community expectations and requirements, and to prepare a viable set of requirements to support a competitive modernization competition. | | | | |
| Anti-Radiation Missile (ARM) Asset Defense: Provides improved capability for PATRIOT to protect other Army and Joint Services Sensors from ARM attacks. Builds on an initial capability provided in Post-Deployment Build-7 by determining remaining gaps, identifying and evaluating alternatives, and implementing further improvements. | | | | |
| Tactical Telemetry Ground Station: Develops a ground-based telemetry receive station to be deployed with the tactical units and collect PAC-3 telemetry data for tactical engagements. This data will be used to assess missile and system effectiveness in tactical environments against real-world threats, and will support the development of operational improvements (Firing Doctrine and other system settings) and system software improvements to mitigate stressing threat behaviors. | | | | |
| U.S. Government and contractor support for PIP efforts. | | | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2016 | FY 2017 | FY 2018 |
| Title: PATRIOT Product Improvement | | 87.537 | 49.482 | 90.217 |
| Description: Continuous Improvement to Counter the Evolving Threat. | | | | |
| FY 2016 Accomplishments: -Continued Software Improvement for Threat Evolution and began efforts for Upper Tier Debris Mitigation (UTDM) and THAAD/ PATRIOT Interoperability. | | | | |

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|---|---------|---------|--|----------------|------------------|--|----------------|---------|---------|---------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: FY 2018 Army | | | | | | | Date: May 2017 | | | | |
| Appropriation/Budget Activity 2040 / 7 | | | R-1 Program Element (Number/Name) PE 0607865A / Patriot Product Improvement | | | Project (Number/Name) DV8 / Patriot Product Improvement | | | | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | | | | | | FY 2016 | FY 2017 | FY 2018 | | |
| <div>-Continued Combat ID enhancements and Tasks 2, 6, and 7 activities.</div> <div>-Continued Radar Digital Processor (RDP) integration into the PDB-8 system configuration to support the U.S. FY2017 fielding, to provide the field with additional capability and growth potential to counter emerging threats.</div> <div>-Continued Advanced Electronic Counter Measures (AECM) development and began Anti-Radiation Missile (ARM) Defense development.</div> <div>-Completed Flat Panel Array Concept Development</div> <div>-Completed RDP developmental efforts.</div> <div>-U.S. Government and contractor support to counter emerging threat.</div> <div>FY 2017 Plans:</div> <div>-Continues Software Improvement for Threat Evolution and efforts for Advanced Electronic Countermeasures (AECM).</div> <div>-Continues Combat ID Enhancements.</div> <div>-Continues Tasks 2, 6, and 7 activities.</div> <div>-U.S. Government and contractor support to counter emerging threat.</div> <div>-Initiate development activities associated with Positioning, Navigation, and Timing (PNT).</div> <div>FY 2018 Plans:</div> <div>-Continues Software Improvement for Threat Evolution, UTDM, THAAD/PATRIOT Interoperability and AECM.</div> <div>-Begins Tactical Telemetry Ground Station development.</div> <div>-Continues Combat ID enhancements, Assured PNT and ARM Asset Defense development.</div> <div>-Continues Tasks 2, 6, and 7 activities.</div> <div>-Begins RDP Waveform Suite activities</div> <div>-U.S. Government and contractor support to counter emerging threat.</div> | | | | | | | | | | | |
| Accomplishments/Planned Programs Subtotals | | | | | | | 87.537 | 49.482 | 90.217 | | |
| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
| Line Item | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
| • C50700: Patriot Mods (C50700) | 241.883 | 425.307 | 305.814 | - | 305.814 | 256.204 | 201.228 | 234.245 | 214.324 | Continuing | Continuing |
| Remarks | | | | | | | | | | | |
| The improvements/enhancements developed through the PATRIOT Product Improvement Program (PIP) are interrelated with the hardware kits that are procured and installed under the Missile Procurement, Army (MIPA) appropriation's PATRIOT Mods program and maximize the PAC-3 MSE capabilities. | | | | | | | | | | | |

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| Exhibit R-2A, RDT&E Project Justification: FY 2018 Army | | Date: May 2017 |
| Appropriation/Budget Activity 2040 / 7 | R-1 Program Element (Number/Name) PE 0607865A / Patriot Product Improvement | Project (Number/Name) DV8 / Patriot Product Improvement |
| <p><u>D. Acquisition Strategy</u></p> <p>The design objective of the PATRIOT system was to provide a baseline system capable of modification to cope with continuing threat evolution. This program minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The PATRIOT Product Improvement Program upgrades the PATRIOT system to address operational lessons learned, enhancements to joint force interoperability and communications, and other system performance improvements to provide overmatch capability against the emerging threat. Upgrades are implemented through individual hardware and software materiel changes and fielded incrementally. This program encompasses several changes which will require the use of a variety of acquisition methods to develop, test, procure and field. Future software capabilities will be incorporated into future Post Deployment Build (PDB) releases.</p> <p><u>E. Performance Metrics</u></p> <p>N/A</p> | | |

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| Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army | | | | | | | | | | | | Date: May 2017 | | | |
|---|------------------------|-----------------------------------|-------------|---------|------------|--|------------|--------------|------------|--|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity 2040 / 7 | | | | | | R-1 Program Element (Number/Name) PE 0607865A / Patriot Product Improvement | | | | Project (Number/Name) DV8 / Patriot Product Improvement | | | | | |
| Management Services (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Government Program Management | MIPR | RSA, AL : RSA, AL | 1.900 | 1.721 | Oct 2015 | 2.379 | Oct 2016 | 5.177 | Oct 2017 | - | | 5.177 | Continuing | Continuing | Continuing |
| U.S. Contracts | Various | Multiple : Multiple | 2.161 | 1.600 | Feb 2016 | 1.600 | Feb 2017 | 1.600 | Feb 2018 | - | | 1.600 | Continuing | Continuing | Continuing |
| Subtotal | | | 4.061 | 3.321 | | 3.979 | | 6.777 | | - | | 6.777 | - | - | - |
| Product Development (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Software Improvement for Threat Evolution | Various | Multiple : Multiple | 21.770 | 9.600 | Jan 2016 | 8.442 | Jan 2017 | 9.246 | Jan 2018 | - | | 9.246 | Continuing | Continuing | 0.000 |
| Upper Tier Debris Mitigation (UTDM) | Various | Multiple : Multiple | 0.000 | 1.000 | Jan 2016 | - | | 4.000 | Jan 2018 | - | | 4.000 | Continuing | Continuing | 0.000 |
| Radar Digital Processor (RDP) Development | Various | Raytheon : Andover, Massachusetts | 48.335 | 1.500 | Jan 2016 | - | | - | | - | | - | 0.000 | 49.835 | 0.000 |
| RDP Waveform Suite | Various | Raytheon : Andover, Massachusetts | 0.000 | - | | - | | 2.500 | Jan 2018 | - | | 2.500 | Continuing | Continuing | 0.000 |
| THAAD PATRIOT Interoperability | Various | Raytheon : Andover, Massachusetts | 1.200 | 2.000 | Feb 2016 | - | | 4.000 | Feb 2018 | - | | 4.000 | Continuing | Continuing | 0.000 |
| Advanced Electronic Counter Measures (AECM) | Various | Multiple : Multiple | 26.700 | 15.000 | Jan 2016 | 9.000 | Jan 2017 | 15.158 | Jan 2018 | - | | 15.158 | Continuing | Continuing | 0.000 |
| Task 2 Non-Ballistic Tactical Ballistic Missile (TBM) | Various | Multiple : Multiple | 10.700 | 14.000 | Jan 2016 | 5.400 | Feb 2017 | 8.000 | Jan 2018 | - | | 8.000 | Continuing | Continuing | 0.000 |
| Task 6 Discrimination Improvements | Various | Multiple : Multiple | 6.500 | 15.500 | Feb 2016 | 6.000 | Feb 2017 | 9.500 | Feb 2018 | - | | 9.500 | Continuing | Continuing | 0.000 |
| Task 7 Tactical Ballistic Missile (TBM) Countermeasures | Various | Multiple : Multiple | 1.000 | 12.000 | Jan 2016 | 4.000 | May 2017 | 10.700 | Jan 2018 | - | | 10.700 | Continuing | Continuing | 0.000 |
| Assured PNT | Various | Multiple : Multiple | 0.000 | - | | 7.440 | Jan 2017 | 3.600 | Jan 2018 | - | | 3.600 | Continuing | Continuing | 0.000 |
| Combat ID Enhancements | Various | Multiple : Multiple | 1.800 | 9.016 | Feb 2016 | 4.621 | May 2017 | 9.000 | Feb 2018 | - | | 9.000 | Continuing | Continuing | 0.000 |

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| Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army | | | | | | | | | | | | | Date: May 2017 | | |
| Appropriation/Budget Activity 2040 / 7 | | | | | | R-1 Program Element (Number/Name) PE 0607865A / <i>Patriot Product Improvement</i> | | | | Project (Number/Name) DV8 / <i>Patriot Product Improvement</i> | | | | | |

| Product Development (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 Total | | | |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Flat Panel Array Concept Development | Various | Multiple : Multiple | 1.300 | 2.000 | Jan 2016 | - | | - | | - | | - | 0.000 | 3.300 | 0.000 |
| Anti-Radiation Missile (ARM) Asset Defense | Various | Raytheon : Andover, Massachusetts | 0.000 | 2.000 | Feb 2016 | - | | 3.000 | Feb 2018 | - | | 3.000 | Continuing | Continuing | 0.000 |
| Tactical Telemetry Ground Station | Various | Multiple : Multiple | 0.000 | - | | - | | 4.036 | Jan 2018 | - | | 4.036 | Continuing | Continuing | 0.000 |
| Subtotal | | | 119.305 | 83.616 | | 44.903 | | 82.740 | | - | | 82.740 | - | - | 0.000 |

Remarks
The contract method type Sole Source/Various is Fixed Price Level of Effort which includes Cost Plus Fixed Fee for material, ODC, and travel.

| Test and Evaluation (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 Total | | | |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| RDEC and Other Govt Agencies | MIPR | RDEC and OGA'S : RSA, AL | 3.312 | 0.600 | Jan 2016 | 0.600 | Jan 2017 | 0.700 | Jan 2018 | - | | 0.700 | Continuing | Continuing | Continuing |
| Subtotal | | | 3.312 | 0.600 | | 0.600 | | 0.700 | | - | | 0.700 | - | - | - |

| | Prior Years | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|--------------------|----------------|----------------|---------------------|--------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Project Cost Totals | 126.678 | 87.537 | 49.482 | 90.217 | - | 90.217 | - | - | - |

Remarks

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|---|-------------|---|---|---|---------|---|---|---|------------------------------------|--|---|---|-----------------------------------|---|---|---|----------------|---|---|--|---------|---|---|---|---------|---|---|---|--|
| Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army | | | | | | | | | | | | | | | | | | | | Date: May 2017 | | | | | | | | | |
| Appropriation/Budget Activity 2040 / 7 | | | | | | | | | | R-1 Program Element (Number/Name) PE 0607865A / Patriot Product Improvement | | | | | | | | | | Project (Number/Name) DV8 / Patriot Product Improvement | | | | | | | | | |
| Event Name | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | | FY 2022 | | | | |
| | 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 | |
| Software Build | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | Software Build | | | | | | | | | | | | | | | | |
| Advanced Electronic Counter Measures (AECM) | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | AECM | | | | | | | | | | | | | | | | |
| Software Improvement for Threat Evolution | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | Software Threat | | | | | | | | | | | | | | | | |
| Combat ID Enhancements | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Combat ID Enhancements | | | | | | | | | | | | | | | | | | | | |
| (1) PDB 8 IOC | | | | | | | | | <div></div> PDB-8 IOC | | | | | | | | | | | | | | | | | | | | |
| PDB 8 Fielding | | | | | | | | | | | | | | | | | PDB-8 Fielding | | | | | | | | | | | | |
| Task 2 Non-Ballistic Tactical Ballistic Missile (TBM) | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Task 2 Non-Ballistic TBM | | | | | | | | | | | | | | | | | | | | |
| Task 6 Discrimination Improvements | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Task 6 Discrimination Improvements | | | | | | | | | | | | | | | | | | | | |
| Task 7 Tactical Ballistic Missile (TBM) Countermeasures | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Task 7 TBM Countermeasures | | | | | | | | | | | | | | | | | | | | |
| Assured PNT | | | | | | | | | | | | | Assured PNT | | | | | | | | | | | | | | | | |
| Radar Digital Processor Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | RDP Development | | | | | | | | | | | | | | | | | | | | |
| Lower Tier Air & Missile Defense-Capability (LTAMD-C) Concept Study | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | LTAMD-C Concept Study | | | | | | | | | | | | | | | | | | | | |
| Tactical Telemetry Ground Station | <div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | Tactical Telemetry Ground Station | | | | | | | | | | | | | | | | |

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| Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army | | | Date: May 2017 |
| Appropriation/Budget Activity 2040 / 7 | R-1 Program Element (Number/Name) PE 0607865A / <i>Patriot Product Improvement</i> | Project (Number/Name) DV8 / <i>Patriot Product Improvement</i> | |

Schedule Details

| Events | Start | | End | |
|---|----------------|-------------|----------------|-------------|
| | Quarter | Year | Quarter | Year |
| Software Build | 4 | 2005 | 4 | 2022 |
| Advanced Electronic Counter Measures (AECM) | 1 | 2014 | 4 | 2022 |
| Software Improvement for Threat Evolution | 1 | 2014 | 4 | 2022 |
| Combat ID Enhancements | 1 | 2014 | 4 | 2022 |
| PDB 8 IOC | 2 | 2018 | 2 | 2018 |
| PDB 8 Fielding | 2 | 2018 | 4 | 2022 |
| Task 2 Non-Ballistic Tactical Ballistic Missile (TBM) | 1 | 2015 | 4 | 2022 |
| Task 6 Discrimination Improvements | 1 | 2014 | 4 | 2021 |
| Task 7 Tactical Ballistic Missile (TBM) Countermeasures | 1 | 2015 | 4 | 2022 |
| Assured PNT | 1 | 2017 | 4 | 2021 |
| Radar Digital Processor Development | 1 | 2012 | 3 | 2016 |
| Lower Tier Air & Missile Defense-Capability (LTAMD-C) Concept Study | 1 | 2014 | 4 | 2016 |
| Tactical Telemetry Ground Station | 2 | 2018 | 4 | 2022 |