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| Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army | | | | | | | | | | Date: March 2019 | | |
|--|-------------|---------|---------|--------------|---|---------------|---------|---------|---------|------------------|------------------|------------|
| Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD) | | | | | R-1 Program Element (Number/Name) PE 0605028A I Armored Multi-Purpose Vehicle (AMPV) | | | | | | | |
| COST (\$ in Millions) | Prior Years | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete | Total Cost |
| Total Program Element | - | 184.300 | 111.821 | 96.730 | - | 96.730 | 96.687 | 0.000 | 0.000 | 0.000 | 0.000 | 489.538 |
| EB5: Armored Multi-Purpose Vehicle | - | 184.300 | 111.821 | 96.730 | - | 96.730 | 96.687 | 0.000 | 0.000 | 0.000 | 0.000 | 489.538 |

A. Mission Description and Budget Item Justification

The Armored Multi-Purpose Vehicle (AMPV) is the materiel solution for replacement of the Army's Armored Personnel Carrier (M113) Family of Vehicles (FoV) within the Armored Brigade Combat Team (ABCT). It will mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability across the Spectrum of Conflict. The AMPV will replace five mission roles currently performed by the M113 FoV by transferring the current M113 Mission Equipment Packages (MEP) to a new Military Vehicle Derivative (MVD) platform. In total, the AMPV FoV will account for approximately 30% of the ABCT's tracked fleet and consists of the following five variants:

1. Mission Command (MCmd) Vehicle: This platform enables effective mission command planning and execution for both the Tactical Operations Center (TOC) and Tactical Command (TAC) Vehicle versions of the MCmd. It will host current Battle Command Systems, future replacements, and upgrades of hardware and software.
2. Medical Treatment (MT) Vehicle: This platform will provide a protected surgical environment, with adequate lighting and accessible medical equipment. It will provide a capability for immediate medical care for one patient by a medical crew of four.
3. Medical Evacuation (ME) Vehicle: This platform will conduct ambulance type activities and provide casualty evacuation for up to four litters or six ambulatory patients, with a crew of three medical attendants.
4. General Purpose (GP) Vehicle: This platform will operate throughout the battle space by conducting re-supply, maintenance, casualty evacuation, and other tasks within the formation.
5. Mortar Carrier (MC) Vehicle: This platform will provide immediate responsive fire support to conduct fast-paced offensive operations.

The AMPV program was initiated with a Capability Development Document (CDD) that was approved on 21 June 2013 and subsequently revised on 24 October 2016. The CDD reflects a set of stable, technologically achievable requirements. A Milestone B (MS B) Defense Acquisition Board (DAB) was held on 9 December 2014 and it was followed by an Acquisition Decision Memorandum (ADM) that was signed on 22 December 2014. The ADM approved MS B for the AMPV program and entry into the Engineering and Manufacturing Development (EMD) phase. In addition, the ADM authorized the Army to proceed with award of the EMD prime contract, which occurred on 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). A subsequent ADM was issued on 26 September 2017 and it approved: a revised acquisition documentation tailoring plan, revised Milestone C entrance criteria, and an increase in the Low Rate Initial Production (LRIP) quantity to 551 vehicles (to recognize the Army's desire for early fielding of AMPVs for the European Deterrence Initiative). An ADM was then issued on 1 November 2017 and it delegated Milestone Decision Authority to the Secretary of the Army and re-designated AMPV as an Acquisition Category (ACAT) IC program. The FY2020 planned program primarily consists of initiation of Production Qualification Testing (PQT), Initial Operational Test & Evaluation (IOTE) planning, and the initiation of the Production and Deployment phase Live Fire Test and Evaluation (LFT&E). Prime contractor support will be required for testing and engineering and ensure adequate system support packages will be available during the tests. Government test locations will be used for the tests and government personnel will be responsible for the overall management of the efforts. An Army Systems Acquisition Review Council (ASARC) took place on December 20, 2018 with the Army Acquisition Executive (AAE) and the Vice Chief Staff of the Army (VCSA). The meeting resulted in the approval of the AMPV to enter MS C and LRIP.

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| Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD) | | R-1 Program Element (Number/Name) PE 0605028A / Armored Multi-Purpose Vehicle (AMPV) | | | |
| B. Program Change Summary (\$ in Millions) | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
| Previous President's Budget | 199.778 | 118.239 | 92.730 | - | 92.730 |
| Current President's Budget | 184.300 | 111.821 | 96.730 | - | 96.730 |
| Total Adjustments | -15.478 | -6.418 | 4.000 | - | 4.000 |
| • Congressional General Reductions | -0.152 | -0.139 | | | |
| • Congressional Directed Reductions | -8.000 | -6.279 | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -7.326 | - | | | |
| • Adjustments to Budget Years | - | - | 4.000 | - | 4.000 |

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|---|-------------|---------|---------|--------------|---|---------------|---------|---------|--|------------------|------------------|------------|
| Appropriation/Budget Activity 2040 / 5 | | | | | R-1 Program Element (Number/Name) PE 0605028A / Armored Multi-Purpose Vehicle (AMPV) | | | | Project (Number/Name) EB5 / Armored Multi-Purpose Vehicle | | | |
| COST (\$ in Millions) | Prior Years | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete | Total Cost |
| EB5: Armored Multi-Purpose Vehicle | - | 184.300 | 111.821 | 96.730 | - | 96.730 | 96.687 | 0.000 | 0.000 | 0.000 | 0.000 | 489.538 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

Note

This program supports the Cross Functional Team (CFT).

A. Mission Description and Budget Item Justification

The Armored Multi-Purpose Vehicle (AMPV) is the materiel solution for replacement of the Army's Armored Personnel Carrier (M113) Family of Vehicles (FoV) within the Armored Brigade Combat Team (ABCT). It will mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability across the Spectrum of Conflict. The AMPV will replace five mission roles currently performed by the M113 FoV by transferring the current M113 Mission Equipment Packages (MEP) to a new Military Vehicle Derivative (MVD) platform. In total, the AMPV FoV will account for approximately 30% of the ABCT's tracked fleet and consists of the following five variants:

1. Mission Command (MCmd) Vehicle: This platform enables effective mission command planning and execution for both the Tactical Operations Center (TOC) and Tactical Command (TAC) Vehicle versions of the MCmd. It will host current Battle Command Systems, future replacements, and upgrades of hardware and software.
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The AMPV program was initiated with a Capability Development Document (CDD) that was approved on 21 June 2013 and subsequently revised on 24 October 2016. The CDD reflects a set of stable, technologically achievable requirements. A Milestone B (MS B) Defense Acquisition Board (DAB) was held on 9 December 2014 and it was followed by an Acquisition Decision Memorandum (ADM) that was signed on 22 December 2014. The ADM approved MS B for the AMPV program and entry into the Engineering and Manufacturing Development (EMD) phase. In addition, the ADM authorized the Army to proceed with award of the EMD prime contract, which occurred on 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). A subsequent ADM was issued on 26 September 2017 and it approved: a revised acquisition documentation tailoring plan, revised Milestone C entrance criteria, and an increase in the Low Rate Initial Production (LRIP) quantity to 551 vehicles (to recognize the Army's desire for early fielding of AMPVs for the European Deterrence Initiative). An ADM was then issued on 1 November 2017 and it delegated Milestone Decision Authority to the Secretary of the Army and re-designated AMPV as an Acquisition Category (ACAT) IC program. The FY2020 planned program primarily consists of initiation of Production Qualification Testing (PQT), Initial Operational Test & Evaluation (IOTE) planning, and the initiation of the Production and Deployment phase Live Fire Test and Evaluation (LFT&E). Prime contractor support will be required for testing and engineering and ensure adequate system

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| Exhibit R-2A, RDT&E Project Justification: PB 2020 Army | | | Date: March 2019 | | | |
| Appropriation/Budget Activity 2040 / 5 | | R-1 Program Element (Number/Name) PE 0605028A / Armored Multi-Purpose Vehicle (AMPV) | | Project (Number/Name) EB5 / Armored Multi-Purpose Vehicle | | |
| support packages will be available during the tests. Government test locations will be used for the tests and government personnel will be responsible for the overall management of the efforts. An Army Systems Acquisition Review Council (ASARC) took place on December 20, 2018 with the Army Acquisition Executive (AAE) and the Vice Chief Staff of the Army (VCSA). The meeting resulted in the approval of the AMPV to enter MS C and LRIP. | | | | | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
| Title: Armored Multi-Purpose Vehicle (AMPV) Product Development | | 129.031 | 71.292 | 62.085 | - | 62.085 |
| Description: AMPV Product Development costs include all efforts provided under the AMPV EMD prime contract along with Government Furnished Material (GFM). Significant examples of prime contract effort include: development engineering, system engineering/program management, prototype hardware procurement, prototype system level fabrication and integration, software development, support to the government test program, and oversight of subcontractors/suppliers. Also included are all efforts performed by subcontractors / suppliers who are under contract to the AMPV EMD prime contractor. This element also includes the recurring manufacturing cost to procure the vehicles that will support Full-Up System Level (FUSL) live fire testing. | | | | | | |
| FY 2019 Plans: Prime contractor activities in FY2019 consisted of efforts that supported the Engineering and Manufacturing Development (EMD) contract. The contractor provided support of EMD testing activities at government test locations; including Electromagnetic Interference (EMI) testing at the Electronic Proving Ground (EPG), system live fire testing of prototypes at Aberdeen Proving Ground (APG), and Limited User Testing (LUT) at a location to be determined. All testing activities were completed by the end of 1QFY2019. As required, the contractor analyzed the results of the testing program and incorporated any necessary design changes into selected prototypes. In addition to test support, the contractor completed a System Verification Review / Production Readiness Review (SVR/PRR) 1QFY2019. The SVR/PRR is a formal examination of the program to ensure that the AMPV design is ready for production and that the contractor has accomplished adequate production planning. As part of the AMPV design assessment, the contractor may also evaluate the capabilities of the AMPV design to satisfy other emerging Army requirements. Based on all engineering design work completed under the EMD contract, the contractor will also complete and deliver a final Technical Data Package (TDP). A final significant area of effort for the prime contractor during the EMD contract is continued work related to Logistics Support. This includes completion of the Logistics Demonstration, completion of the entire Technical Manual validation, and the start of Interactive Electronic Technical Manual (IETM) verification. In addition, and in support of Milestone C, the contractor will support an update to the Life Cycle Sustainment Plan (LCSP), completion of the Product Support Business Case Analysis, completion of the Depots Source of Repair (DSOR) Analysis, completion of the Core Depot Assessment (CDA), and completion of the Item Unique Identification (IUID) Plan. Following completion of Milestone C (completed 1QFY2019), the program will exercise the existing | | | | | | |

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| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
| <p>option for the first year of Low Rate Initial Production (LRIP-1). Under the LRIP-1 contract option, the prime contractor will provide support to planned Production Qualification Testing (PQT) and, therefore, this element also includes costs related to PQT support. FY2019 prime contractor efforts will include support to PQT planning and the identification/procurement of System Support Packages (SSPs) that will be required for PQT. Also in support of PQT, the Government will procure selected mission equipment for the PQT test articles.</p> <p>FY 2020 Base Plans: Prime contractor activities in FY2020 consist of efforts that support Production Qualification Testing (PQT), the Production and Deployment phase Live Fire Test and Evaluation (LFT&E), Initial Operational Test and Evaluation (IOT&E) planning, and potential design efforts to address changes stemming from the tests and/ or to satisfy other emerging Army requirements. PQT is scheduled to begin 2QFY2020 and is planned to conclude 3QFY2021. Prior to the start of testing, the contractor will conduct a system level 250 mile shakedown test of each of the Reliability, Availability, and Maintainability (RAM) vehicles. During the PQT, the contractor will provide test/engineering support and field service representatives at the Aberdeen Test Center (ATC), the Yuma Test Center (YTC), and at White Sands Missile Range (WSMR) as well as Electronic Proving Ground (EPG), Cold Regions Test Center (CRTC), Tropic Regions Test Center (TRTC), and Dugway Proving Grounds (DPG). In addition, the contractor will conduct Operator New Equipment Training (OPNET) and Field Level Maintenance New Equipment Training (FLMNET) prior to the start of PQT. This includes all necessary equipment and materials to conduct the training. Finally, as required, the contractor will maintain and replenish the System Support Packages (SSPs) needed to complete testing. The LFT&E effort is intended to satisfy the requirements of 10 U.S.C. 2366 (Major systems and munitions programs: survivability testing and lethality testing required before full-scale production). Two of each variant will be subject to the LFT&E and costs included in this element are the support costs provided by the AMPV prime contractor. As is the case for the PQT, the contractor will provide support personnel at the primary test location (Aberdeen Test Center). The goal is to return each vehicle to a near operational condition after each live fire shot. The contractor must ensure that system support packages include adequate spare and repair parts. As required, the contractor will support government personnel in repairing each vehicle prior to the subsequent shot. Costs in this element also include those contractor program management efforts necessary to oversee the above described activities.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Decrease is due to the program transition into the Low Rate Initial Production (LRIP) phase.</p> | | | | | | |
| Title: AMPV Government Program Management Costs | | 21.055 | 15.700 | 3.888 | - | 3.888 |

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| B. Accomplishments/Planned Programs (\$ in Millions) | | | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
| <p>Description: AMPV Government Program Management costs include efforts to provide Government oversight of the AMPV program. This includes Systems Engineering and Program Management. Government and support Contractor salaries are included, as well as travel and other support costs that are required to effectively manage the program. Costs in this category do not include Government Furnished Material or efforts that are specific and unique to end item testing that is performed at Government test locations.</p> <p>FY 2019 Plans: Provided integrated program management for all development activities, to include providing oversight to BAE. Eight Integrated Product Teams (IPTs) continued to oversee the technical development efforts of BAE in order to monitor and track progress related to the achievement of overall system performance requirements. This included review and acceptance of all formal contract deliverables and test reports. The AMPV Earned Value Management (EVM) team continued to evaluate cost and schedule performance against the established Performance Measurement Baseline (PMB) and Integrated Master Schedule (IMS). There are three overarching areas of emphasis for the Government Project Management team in FY2019: the EMD phase of the program, completion of the program level Milestone C (MS C), and initiation of Low Rate Initial Production (LRIP). For EMD, the team will participated in, and reviewed artifacts for, the System Verification Review/Production Readiness Review (SVR/PRR). In addition, the team ensured all EMD deliverables are in accordance with contract requirements and will support any other contract efforts. For Milestone C, the team finalized the required documents and will participate in meetings/reviews that lead to the actual review 2QFY2019. Related to LRIP, the team provided oversight to the prime contractor. The effort related to LRIP is limited to only those activities that are traceable to Production Qualification Testing. All other Government Program Management efforts in support of LRIP will be covered by Procurement funding. Finally, as required, the AMPV Government Project Management team may support Army planning by initiating efforts that relate to the AMPV design possibly being used to satisfy other emerging Army requirements.</p> <p>FY 2020 Base Plans: Provide integrated program management for all development activities, to include providing oversight to BAE. The primary area of emphasis for the RDT&E funded Government Project Management team in FY2020 is to provide oversight to those Low Rate Initial Production (LRIP) activities that are traceable to Production Qualification Testing or Live Fire Test and Evaluation. All other Government Program Management efforts in support of LRIP will be covered by Procurement funding. Also, as required, the AMPV Government Project</p> | | | | | | | |

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| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
| Management team may support Army assessment efforts that relate to the AMPV design possibly being used to satisfy other emerging Army requirements. | | | | | | |
| FY 2019 to FY 2020 Increase/Decrease Statement: Decrease is due to the program transitioning from RDTE funded Program Management Support to Production funded Program Management Support. | | | | | | |
| Title: Government Test Costs | | 34.214 | 20.529 | 30.757 | - | 30.757 |
| Description: Government Test costs are for efforts required to perform and validate system-related tests. This element includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing. Also included are costs necessary to acquire data during the conduct of the Government tests. The actual test articles (i.e., functionally configured systems) are excluded from this element. Also excluded are prime contractor costs incurred in support of the Government system level test. | | | | | | |
| FY 2019 Plans: Government Test costs in FY2019 reflected the EMD testing, test data evaluation and reporting, and the commencement of test planning for Production Qualification Testing (PQT). All Developmental Testing (DT) will be completed 1-2QFY2019. This included Electromagnetic Interference (EMI) testing at the Electronic Proving Ground (EPG). System level Live Fire (LF) testing of prototypes (which started in FY2018) will likewise be completed in FY2019. The Limited User Test (LUT) was completed 1QFY2019. All the LUT follow-up evaluations, surveys, and final Data Authentication Groups will be completed and the Army Test and Evaluation Command will complete the Operational Test Command Milestone Assessment Report (OMAR). The Army test community will finalize the AMPV Milestone C Test and Evaluation Master Plan (TEMP) and will staff the TEMP for Army and Department of Defense level approvals. In FY2019, detailed test planning for PQT (Performance and RAM) will take place and be finalized to support testing in FY2020. The Full-Up System Level (FUSL) live fire test planning efforts also commenced. Test ammunition and test threat management, forecasting, and procurement will continue for future test efforts. | | | | | | |
| FY 2020 Base Plans: Government test costs in FY2020 are primarily related to Production Qualification Testing (PQT) and the Production and Deployment phase Live Fire Test and Evaluation (LFT&E). Both PQT and the LFT&E are scheduled to begin 3QFY2020 and will conclude 4QFY2021. Currently, a total of 25 vehicles will undergo Production Qualification Testing. As part of PQT, and in support of Reliability, Availability, and Maintainability (RAM) assessments, six vehicles will run a total of 14,000 miles. The miles will be equally split between | | | | | | |

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| B. Accomplishments/Planned Programs (\$ in Millions) | | | | | | |
| | | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
| the Aberdeen Test Center (ATC) and the Yuma Test Center (YTC). An additional 19 vehicles will undergo performance testing as part of PQT. This testing will be performed at ATC, YTC, White Sands Missile Range (WSMR), Electronic Proving Ground (EPG), Cold Regions Test Center (CRTC), Tropic Regions Test Center (TRTC), and Dugway Proving Grounds (DPG). PQT is conducted with production-representative vehicles from LRIP. The objectives include verification that the production-representative systems meet performance requirements, generation of data to support the system evaluation in support of the Full-Rate Production (FRP) decision, and determination of system readiness to enter Initial Operational Testing (IOT). Government costs include all costs incurred at the test sites and costs associated with Government personnel that will be collecting/analyzing test data, as well as personnel associated with providing oversight of the test activities. The LFT&E will yield information to complement earlier vulnerability tests and modeling and analysis efforts, and will be used to fill data voids from prior testing. It will validate ballistic and blast performance at the system level to completely evaluate vehicle, crew, and occupant survivability. Ten vehicles will undergo testing at ATC and there are three elements to the testing: Controlled Damage Experimentation (CDE), Fire Survivability Testing, and Full-up System Level (FUSL) testing. CDE will be conducted on selected subsystems integrated into the AMPV to determine the consequences of various types of damage. This information will be used to confirm the impact of subsystem damage on platform functionality. Fire Survivability Testing will generate the data required to evaluate the effectiveness of the Automatic Fire Extinguishing System (AFES) to protect crews and internal and stowed equipment from fires expected to be initiated by ballistic impacts. FUSL testing will demonstrate the ballistic resiliency and crew survivability of fully functional, production-representative, combat-loaded AMPV variants and investigate the synergistic effects of various damage mechanisms and failure modes. Government costs include all costs incurred at ATC and costs associated with Government personnel that will be collecting/analyzing test data, as well as personnel associated with providing oversight of the test activities. Finally, as required, vehicle design updates incorporated as corrective actions may be proven out on modified prototype vehicles at select Government test locations. All Government costs incurred as a result of these tests are included in this element. | | | | | | |
| FY 2019 to FY 2020 Increase/Decrease Statement: Increase is due to the commencement of significant efforts associated with PQT and LFT&E in FY2020. | | | | | | |
| Title: FY2019 SBIR /STTR Transfer | | - | 4.300 | - | - | - |
| FY 2019 Plans: . | | | | | | |
| FY 2019 to FY 2020 Increase/Decrease Statement: | | | | | | |

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| B. Accomplishments/Planned Programs (\$ in Millions) | | | | | | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | |
| N/A | | | | | | | | | | | |
| Accomplishments/Planned Programs Subtotals | | | | | | 184.300 | 111.821 | 96.730 | - | 96.730 | |
| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
| Line Item | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete Total Cost | |
| • G80819: Armored Multi Purpose Vehicle (AMPV) | 558.318 | 672.742 | 264.040 | 221.638 | 485.678 | 617.046 | 621.180 | 642.734 | 738.188 | 10,272.884 14,608.770 | |
| Remarks | | | | | | | | | | | |
| D. Acquisition Strategy | | | | | | | | | | | |
| <p>The Armored Multi-Purpose Vehicle (AMPV) program entered the acquisition process at Milestone B. This was accomplished via an Acquisition Decision Memorandum (ADM) that was signed on 22 December 2014. The ADM also authorized the Army to proceed with award of the Engineering and Manufacturing Development (EMD) prime contract with three Low Rate Initial Production (LRIP) options. The contract was awarded on 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). The award was on a competitive basis utilizing formal Source Selection Evaluation Board (SSEB). An Army Systems Acquisition Review Council (ASARC) took place on December 20, 2018 with the Army Acquisition Executive (AAE) and the Vice Chief Staff of the Army (VCSA). The meeting resulted in the approval of the AMPV to enter MS C and LRIP.</p> | | | | | | | | | | | |
| E. Performance Metrics | | | | | | | | | | | |
| N/A | | | | | | | | | | | |

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|--|------------------------|--------------------------------|-------------|---------|------------|---|------------|--------------|------------|--|------------|------------------|------------------|------------|--------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army | | | | | | | | | | | | Date: March 2019 | | | |
| Appropriation/Budget Activity 2040 / 5 | | | | | | R-1 Program Element (Number/Name) PE 0605028A / Armored Multi-Purpose Vehicle (AMPV) | | | | Project (Number/Name) EB5 / Armored Multi-Purpose Vehicle | | | | | |
| Product Development (\$ in Millions) | | | | FY 2018 | | FY 2019 | | FY 2020 Base | | FY 2020 OCO | | FY 2020 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 |
| Contractor Development Engineering | C/CPIF | BAE : Sterling Heights, MI | 155.864 | 32.301 | Dec 2017 | 18.000 | Dec 2018 | 20.700 | Dec 2019 | - | | 20.700 | 2.953 | 229.818 | - |
| Prototype Material Contractor | C/CPIF | BAE : Sterling Heights, MI | 135.693 | 13.605 | Dec 2017 | - | | - | | - | | - | 0.000 | 149.298 | - |
| Prototype Material Government Furnished | Various | Various : . | 21.200 | 5.129 | Dec 2017 | 2.400 | Dec 2018 | - | | - | | - | 0.000 | 28.729 | - |
| Contractor System Engineering, Data, Test and Program Management | C/CPIF | BAE : Sterling Heights, MI | 90.196 | 55.665 | Dec 2017 | 16.000 | Dec 2018 | 13.332 | Dec 2019 | - | | 13.332 | 13.887 | 189.080 | - |
| Procurement of Live Fire Test Assets | Option/ FPIF | BAE : York, PA | - | 22.331 | Dec 2017 | - | | - | | - | | - | 0.000 | 22.331 | - |
| Contractor Support to Qualification, Live Fire, & Operational Testing | C/CPIF | BAE : Sterling Heights, MI | - | - | | 34.892 | Dec 2018 | 28.053 | Dec 2019 | - | | 28.053 | 33.169 | 96.114 | - |
| FY 2019 SBIR / STTR Transfer | TBD | TBD : TBD | - | - | | 4.300 | Nov 2018 | - | | - | | - | 0.000 | 4.300 | - |
| Subtotal | | | 402.953 | 129.031 | | 75.592 | | 62.085 | | - | | 62.085 | 50.009 | 719.670 | N/A |
| Remarks Armored Multi Purpose Vehicle Tech data and system level product development costs. | | | | | | | | | | | | | | | |
| Support (\$ in Millions) | | | | FY 2018 | | FY 2019 | | FY 2020 Base | | FY 2020 OCO | | FY 2020 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 |
| Program Management Support | MIPR | PMO : Warren, MI | 71.506 | 21.055 | Dec 2017 | 15.700 | Dec 2018 | 3.888 | Dec 2019 | - | | 3.888 | 2.657 | 114.806 | - |
| Subtotal | | | 71.506 | 21.055 | | 15.700 | | 3.888 | | - | | 3.888 | 2.657 | 114.806 | N/A |
| Remarks Armored Multi Purpose Vehicle Support Costs. | | | | | | | | | | | | | | | |

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|---|--|--|--|--|--|--|--|--|--|---|--|-------------------------|--|--|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army | | | | | | | | | | | | Date: March 2019 | | | |
| Appropriation/Budget Activity 2040 / 5 | | | | | | R-1 Program Element (Number/Name) PE 0605028A / Armored Multi-Purpose Vehicle (AMPV) | | | | Project (Number/Name) EB5 / Armored Multi-Purpose Vehicle | | | | | |

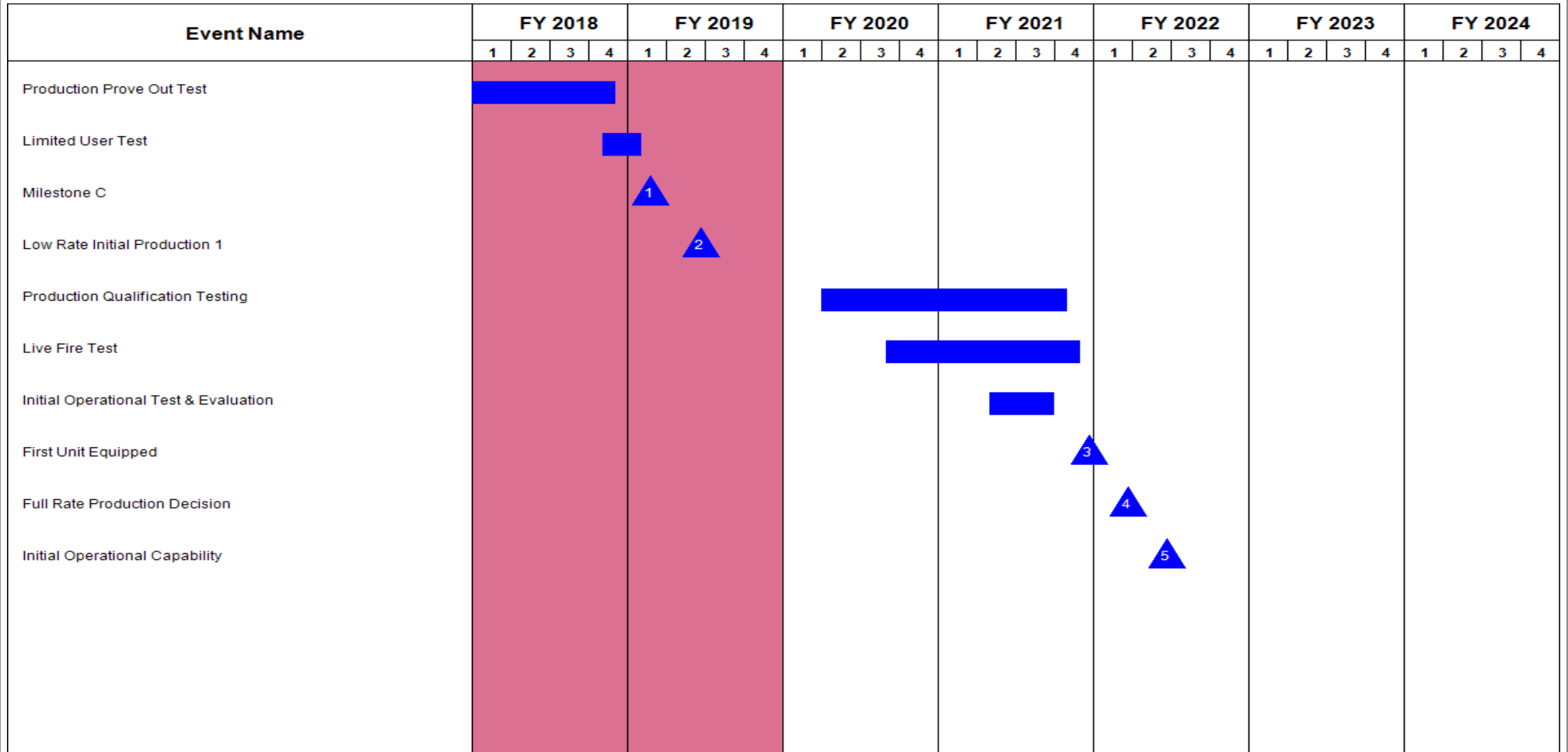
| Test and Evaluation (\$ in Millions) | | | | FY 2018 | | FY 2019 | | FY 2020 Base | | FY 2020 OCO | | FY 2020 Total | | | |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| 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 System Testing | MIPR | Various : . | 31.760 | 34.214 | Dec 2017 | 20.529 | Dec 2018 | 30.757 | Dec 2019 | - | | 30.757 | 44.021 | 161.281 | - |
| Subtotal | | | 31.760 | 34.214 | | 20.529 | | 30.757 | | - | | 30.757 | 44.021 | 161.281 | N/A |

| | Prior Years | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|--------------------|----------------|----------------|---------------------|--------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Project Cost Totals | 506.219 | 184.300 | 111.821 | 96.730 | - | 96.730 | 96.687 | 995.757 | N/A |

Remarks

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| | | | | | |
|--|--|--|-------------------------|---|--|
| Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army | | | Date: March 2019 | | |
| Appropriation/Budget Activity 2040 / 5 | | R-1 Program Element (Number/Name) PE 0605028A / Armored Multi-Purpose Vehicle (AMPV) | | Project (Number/Name) EB5 / Armored Multi-Purpose Vehicle | |



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| Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army | | | Date: March 2019 |
| Appropriation/Budget Activity 2040 / 5 | R-1 Program Element (Number/Name) PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i> | Project (Number/Name) EB5 / <i>Armored Multi-Purpose Vehicle</i> | |

Schedule Details

| Events | Start | | End | |
|---------------------------------------|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| Production Prove Out Test | 4 | 2017 | 4 | 2018 |
| Limited User Test | 4 | 2018 | 1 | 2019 |
| Milestone C | 1 | 2019 | 1 | 2019 |
| Low Rate Initial Production 1 | 2 | 2019 | 2 | 2019 |
| Production Qualification Testing | 2 | 2020 | 4 | 2021 |
| Live Fire Test | 3 | 2020 | 4 | 2021 |
| Initial Operational Test & Evaluation | 2 | 2021 | 3 | 2021 |
| First Unit Equipped | 4 | 2021 | 4 | 2021 |
| Full Rate Production Decision | 1 | 2022 | 1 | 2022 |
| Initial Operational Capability | 2 | 2022 | 2 | 2022 |