

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Army **Date:** February 2015

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>
--	---

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	-	27.345	92.309	230.210	-	230.210	185.505	199.501	123.494	95.397	95.401	1,049.162
EB5: <i>Armored Multi-Purpose Vehicle</i>	-	27.345	92.309	230.210	-	230.210	185.505	199.501	123.494	95.397	95.401	1,049.162

**Note**

The Armored Multi Purpose Vehicle Program was submitted under a new Program Element for the FY 2014 President's Budget. The previous program element was 0203735A, Project DS5, Combat Vehicle Improvement Program. The current program element is 0605028A, Project EB5, Armored Multi Purpose Vehicle (AMPV).

**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 Vehicle (TAC) 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 litter 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 has been initiated on the basis of a Capabilities Development Document (CDD) that was approved 21 June 2013. The CDD reflects a set of stable, technologically achievable requirements. A Milestone B (MS B) Defense Acquisition Board (DAB) was held 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 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). The FY2014 Accomplishments described below largely reflect the lead-up to the MS B and award of the EMD contract. Included are efforts that are related to the preparation of MS B documents and efforts that are related to evaluation of EMD prime contract proposals. The FY2015 and FY2016 Planned Program are related to contractor efforts specific to the EMD prime contract and to Government efforts that provide oversight of the program and of the contract.

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>
--	---

<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	28.285	92.353	234.119	-	234.119
Current President's Budget	27.345	92.309	230.210	-	230.210
Total Adjustments	-0.940	-0.044	-3.909	-	-3.909
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.044			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.940	-			
• Adjustments to Budget Years	-	-	-3.909	-	-3.909

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 2040 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>				<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</i>			
<b>COST (\$ in Millions)</b>	<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>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
EB5: <i>Armored Multi-Purpose Vehicle</i>	-	27.345	92.309	230.210	-	230.210	185.505	199.501	123.494	95.397	95.401	1,049.162
Quantity of RDT&E Articles	-	-	-	-	-	-	-	10	-	-		

**Note**

The previous program element was 0203735A, Project DS5, Combat Vehicle Improvement Program. FY2014 Presidents Budget established the new program element, 0605028A, Project EB5, Armored Multi Purpose Vehicle (AMPV).

**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 Vehicle (TAC) 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 litter 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 has been initiated on the basis of a Capabilities Development Document (CDD) that was approved 21 June 2013. The CDD reflects a set of stable, technologically achievable requirements. A Milestone B (MS B) Defense Acquisition Board (DAB) was held 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 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). The FY2014 Accomplishments described below largely reflect the lead-up to the MS B and award of the EMD contract. Included are efforts that are related to the preparation of MS B documents and efforts that are related to evaluation of EMD prime contract proposals. The FY2015 and FY2016 Planned Program are related to contractor efforts specific to the EMD prime contract and to Government efforts that provide oversight of the program and of the contract.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>	<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
---	----------------	----------------	----------------

<p><b>Title:</b> Armored Multi-Purpose Vehicle (AMPV) Product Development</p> <p><b>Description:</b> 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.</p> <p><b>FY 2015 Plans:</b> Following award of the AMPV EMD contract in 1QFY2015, the prime contractor will initiate and complete detailed planning efforts that will culminate in a Performance Measurement Baseline (PMB) and related Integrated Master Plan (IMP) and Integrated Master Schedule (IMS). These will be validated through a government led Integrated Baseline Review (IBR) 3QFY2015. The prime contractor and key subcontractors will support the IBR. It is expected that the AMPV EMD prime contractor will award key subsystem and component level provider contracts early 2QFY2015. A formal start-of-work meeting will take place 2QFY2015 and work will commence on vehicle design. A Preliminary Design Review (PDR) is planned for 3QFY2015. Approximately 30 artifacts will be generated and delivered in support of PDR. The AMPV EMD prime contractor will operate in an Integrated Product Team (IPT) environment and will use tools such as Earned Value Management and Technical Performance Measures to evaluate and report cost, schedule, and technical status.</p> <p><b>FY 2016 Plans:</b> The AMPV EMD prime contractor will continue to operate in an Integrated Product Team (IPT) environment consisting of eight unique teams. The contractor will support team meetings and reviews and will report program progress through the use of Earned Value Management (EVM) and Technical Performance Measures (TPMs). Activities will transition to detailed design of components and subsystems in FY2016 based on the PDR. These detailed design efforts will be focused on integration of existing components into the AMPV chassis, which will be tailored to the five mission roles. Final prototype designs and related drawings will be completed early in FY2016. In addition, as nearly all of the subsystems that will be integrated into the prototype structures will be existing designs, most of the hardware at a component level is expected to be ordered in 1QFY2016. Integration of these components into subsystems will commence 2QFY2016 and will be mostly complete by 4QFY2016. Prototype final integration, assembly, and checkout will be conducted to allow full vehicle prototypes to begin to be delivered late 1QFY2017. In addition to prototype development and fabrication, the engineering work will conclude with the Critical Design Review (CDR) in 3QFY2016. All artifacts that support CDR will be developed and delivered to the government 60 days prior to the review. Approximately 50 artifacts are expected to be delivered in support of CDR. Government Furnished Material for the system</p>	-	70.492	192.146
--	---	--------	---------

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>	<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>prototypes, mainly consisting of Mission Equipment Packages and communication hardware, will be procured by 2QFY2016. Final builds for armor coupons and ballistic hull test articles will be completed to support live fire/survivability testing in FY17.</p> <p><b>Title:</b> AMPV Government Program Management Costs</p> <p><b>Description:</b> 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><b>FY 2014 Accomplishments:</b> Product Manager (PM) AMPV released the Request for Proposal (RFP) on 26 November 2013 as a full and open competition. Proposals were received on 28 May 2014. Initial buys for Government Furnished Equipment and Materiel (GFE/M) began as well. PM AMPV conducted a Source Selection Evaluation Board (SSEB) beginning 29 May 2014 to select a single vendor to integrate and build the AMPV. FY 2014 funding was used to support the following: preparation of Milestone B Documentation, Source Selection activities, and activities for development and purchasing of Mission Equipment Packages for integration.</p> <p><b>FY 2015 Plans:</b> Following award of the AMPV EMD prime contract, the AMPV Project Management Office (PMO) will initiate United States Code (USC) Title 10 oversight to the EMD contractor. Integrated Product Teams (IPTs) will begin oversight of the development efforts of the EMD contractor in order to monitor and track technical progress. This includes review and acceptance of all formal contract deliverables. Of note will be the conduct of the Systems Requirements Review and the review of approximately 30 deliverables in support of the Preliminary Design Review (PDR) planned for 3QFY2015. In addition, the Government management team will also lead the Integrated Baseline Review (IBR), which will be conducted 3QFY2015.</p> <p><b>FY 2016 Plans:</b> Provide integrated program management for all development activities, to include providing United States Code (USC) Title 10 oversight to the Engineering Manufacturing and Development (EMD) contractor. Eight AMPV Integrated Product Teams (Program Management; Business Management; Engineering; Product Assurance and Test; Reliability, Availability, Maintainability (RAM) Product Support; Product Support Management; Manpower and Personnel Integration; and Government Furnished Material) will continue to oversee the technical development efforts of the EMD contractor in order to monitor and track technical progress related to the development of the various subsystems. This includes review and acceptance of all formal contract deliverables. The AMPV Earned Value Management (EVM) team will continue to evaluate cost and schedule performance against the</p>		27.345	21.817	31.113

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Army		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>	<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
established Performance Measurement Baseline (PMB) and Integrated Master Schedule (IMS). An emphasis for the Government team in FY2016 will be on supporting the contractor's Critical Design Review (CDR), currently planned for 3QFY2016.			
<b>Title:</b> Government Test Costs	-	-	6.951
<b>Description:</b> 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.			
<b>FY 2016 Plans:</b> Acquire Government Furnished Material (GFM) and construct/integrate three base stations for use at Government test sites. Base stations consist of radios, displays, input devices and other related hardware necessary to monitor tests and to collect data. GFM must be on-hand by 3QFY2016 and base stations must be available at test sites by 4QFY2016 so that tests can commence January, 2017.			
<b>Accomplishments/Planned Programs Subtotals</b>	27.345	92.309	230.210

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</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>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• Armored Multi Purpose Vehicle(AMPV): <i>Armored Multi Purpose Vehicle(AMPV) G80819</i>	-	-	-	-	-	-	193.410	396.877	495.292	11,785.385	12,870.964

**Remarks**

**D. Acquisition Strategy**

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 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 following formal Source Selection Evaluation Board (SSEB).

**E. Performance Metrics**

N/A

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / Armored Multi-Purpose Vehicle (AMPV)	<b>Project (Number/Name)</b> EB5 / Armored Multi-Purpose Vehicle
--	--	---

<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 To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</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>			
Contractor Development Engineering	C/CPIF	BAE : Sterling Heights, MI	0.000	-		70.492	Dec 2014	39.323	Dec 2015	-		39.323	66.200	176.015	-
Prototype Material Contractor	C/CPIF	BAE : Sterling Heights, MI	0.000	-		-		75.766	Dec 2015	-		75.766	63.845	139.611	-
Prototype Material Government Furnished	Various	Various : .	0.000	-		-		29.691	Dec 2015	-		29.691	3.954	33.645	-
Contractor System Engineering, Data and Program Management	C/CPIF	BAE : Sterling Heights, MI	0.000	-		-		47.366	Dec 2015	-		47.366	302.499	349.865	-
<b>Subtotal</b>			0.000	-		70.492		192.146		-		192.146	436.498	699.136	-

**Remarks**  
Armored Multi Purpose Vehicle Tech data and system level product development costs.

<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 To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</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>			
Program Management Support	MIPR	PMO : Warren, MI	0.000	27.345	Dec 2013	21.817	Dec 2014	31.113	Dec 2015	-		31.113	96.115	176.390	-
<b>Subtotal</b>			0.000	27.345		21.817		31.113		-		31.113	96.115	176.390	-

**Remarks**  
Armored Multi Purpose Vehicle Support Costs.

<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 To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</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>			
Government System Testing	MIPR	Various : .	0.000	-		-		6.951	Dec 2015	-		6.951	166.685	173.636	-
<b>Subtotal</b>			0.000	-		-		6.951		-		6.951	166.685	173.636	-



**UNCLASSIFIED**

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

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>	<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</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
(1) Milestone B Decision					▲ 1																							
(2) EMD Contract Award					▲ 2																							
(3) Preliminary Design Review								▲ 3																				
(4) Critical Design Review												▲ 4																
Production Prove Out Test																												
Limited User Test																												
(5) Milestone C																					▲ 5							

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Army		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>	<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B Decision	1	2015	1	2015
EMD Contract Award	1	2015	1	2015
Preliminary Design Review	3	2015	3	2015
Critical Design Review	3	2016	3	2016
Production Prove Out Test	3	2017	4	2018
Limited User Test	4	2018	1	2019
Milestone C	2	2019	2	2019