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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 0210609A I Paladin Integrated Management (PIM)							
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	-	5.868	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.868
ED8: Paladin Integrated Management (PIM)	-	5.868	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.868

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

Paladin Integrated Management (PIM) is an ACAT 1C Acquisition Program. The program will replace the current fleet of M109 Family of Vehicles (FoV) consisting of the M109A6 Paladin Self Propelled Howitzer and M992A2 Field Artillery Ammunition Supply Vehicle (FAASV). PIM is an Army Modernization Program that addresses a critical capability gap created by the Non-Line of Sight Cannon termination in June of 2009 as well as obsolescence and Space, Weight, and Power (SWAP) issues in the M109 FoV current fleet. The PIM system integrates current Bradley Fighting Vehicle suspension and drive train items, Future Combat Systems (FCS) developed Electric Gun Drive systems and current fleet (M109A6) fire control systems into a new chassis providing better force protection, survivability and increases in electrical power over the current fleet. PIM is a two vehicle system: The M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition Tracked (CAT). The SPH has all characteristics listed above. The CAT utilizes all of these same components and traits except those related directly to the cannon system. The PIM system replaces the current M109 FoV on a one for one basis, in the cannon fires battalions in the Armored Brigade Combat Team Formations and the Echelons above Brigade (EAB). The overall intent is to increase Soldier force protection, vehicle survivability, provide an appropriate amount of SWAP capacity to add future capabilities, increase vehicle reliability, reduce life cycle costs and extend the life of the M109 FoV through FY 2050.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>
Previous President's Budget	6.112	0.000	0.000	-	0.000
Current President's Budget	5.868	0.000	0.000	-	0.000
Total Adjustments	-0.244	0.000	0.000	-	0.000
• Congressional General Reductions	-0.005	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.239	-			

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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 0210609A / <i>Paladin Integrated Management (PIM)</i>				Project (Number/Name) ED8 / <i>Paladin Integrated Management (PIM)</i>			
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
ED8: <i>Paladin Integrated Management (PIM)</i>	-	5.868	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.868
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

No funding for Program element after FY 2018.

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

Paladin Integrated Management (PIM) is an ACAT 1C Acquisition Program. The program will replace the current fleet of M109 Family of Vehicles (FoV) consisting of the M109A6 Paladin Self Propelled Howitzer and M992A2 Field Artillery Ammunition Supply Vehicle (FAASV). PIM is an Army Modernization Program that addresses a critical capability gap created by the Non-Line of Sight Cannon termination in June of 2009 as well as obsolescence and Space, Weight, and Power (SWAP) issues in the M109 FoV current fleet. The PIM system integrates current Bradley Fighting Vehicle suspension and drive train items, Future Combat Systems (FCS) developed Electric Gun Drive systems and current fleet (M109A6) fire control systems into a new chassis providing better force protection, survivability, and increases in electrical power over the current fleet. PIM is a two vehicle system: The M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition, Tracked (CAT). The SPH has all characteristics listed above. The CAT utilizes all these same components and traits except those related directly to the cannon system. The PIM system replaces the current M109 FoV on a one for one basis, in the cannon fires battalions in the Armored Brigade Combat Team Formations and the Echelons above Brigade (EAB). The overall intent is to increase Soldier force protection, vehicle survivability, provide an appropriate amount of SWAP capacity to add future capabilities, increase vehicle reliability, reduce life cycle costs, and extend the life of the M109 FoV through FY 2050.

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

	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<b>Title:</b> Paladin/FAASV Integrated Management (PIM) Development	1.755	-	-
<b>Description:</b> Funding is provided for the following contractor developmental efforts:			
<b>Title:</b> Program Management	1.335	-	-
<b>Description:</b> Funding is provided for the following program management support			
<b>Title:</b> Training	2.778	-	-
<b>Description:</b> Funding is provided for the following training government and contractor efforts			
<b>Accomplishments/Planned Programs Subtotals</b>	5.868	-	-

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Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0210609A / <i>Paladin Integrated Management (PIM)</i>				Project (Number/Name) ED8 / <i>Paladin Integrated Management (PIM)</i>			
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
• GZ0410: <i>Paladin Integrated Management (PIM)</i>	772.149	525.902	553.425	-	553.425	506.698	512.529	593.001	620.227	3,444.770	7,528.701
Remarks											
D. Acquisition Strategy											
<p>The PIM Program was initiated on 16 August 2007 under the BAE Systems, Inc., System Technical Support (STS) Contract W56HZV-07-C-0096. Subsequent work directives were awarded under BAE STS contract W56HZV-07-C-0256 to further define the configuration of the PIM vehicles. On 14 August 2009, a Research, Development, Test and Evaluation (RDT&amp;E) Contract W56HZV-09-C-0550 was awarded to BAE Systems Inc. for the Prototype Development and Fabrication of 7 prototype vehicles (5 PIM Self Propelled Howitzer (SPH) Systems and 2 PIM Carrier Ammunition, Tracked (CAT) vehicles). A Comprehensive Contract Modification (CCM) award to the RDT&amp;E contract was accomplished on 6 January 2012. This modification allows for the completion of the design engineering and initial developmental test portion of the Engineering and Manufacturing Development (EMD) Phase and transfers the system responsibility for the program from the Government to BAE Systems Inc. An additional modification to the EMD contract was awarded on 18 July 2014 to extend the contract until 31 March 2017 to cover contractor support to Production Qualification Testing (PQT), the Logistics Demonstration, and Initial Operational Test &amp; Evaluation (IOT&amp;E). The awarded Low-Rate Initial Production (LRIP) contract is of a Fixed Price Incentive Firm Target (FPIF) contract type for procurement of vehicles with a period of performance running from November 2013 through approximately June 2019. The LRIP contract will provide for three LRIP years with the initial base year including 19 SPHs and 18 CATs and the remaining three option years with 18 sets, 30 sets and 48 sets, respectively (each set consisting of one each SPH and CAT) of PIM vehicles. The Full Rate Production (FRP) contract is planned as a FPIF contract with the option to convert to a Firm Fixed Price (FFP) contract after the first year of FRP. The FRP contract provides for the remaining PIM vehicles to fulfill the requirement up to the Army Acquisition Objective of 580 sets.</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 0210609A / <i>Paladin Integrated Management (PIM)</i>				Project (Number/Name) ED8 / <i>Paladin Integrated Management (PIM)</i>					
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
Data	SS/CPIF	BAE Systems : York, PA	1.515	-		-		-		-		-	0.000	1.515	-
Training	MIPR	Various OGAs : Various	10.401	2.778	Nov 2017	-		-		-		-	0.000	13.179	-
PIM Development-Government	MIPR	Various OGAs : Various	34.414	1.755	Dec 2018	-		-		-		-	0.000	36.169	-
PIM Development-Contractor	SS/CPIF	BAE Systems : York, PA	123.406	-		-		-		-		-	0.000	123.406	-
Subtotal			169.736	4.533		-		-		-		-	0.000	174.269	N/A
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
PMO/PEO Support	MIPR	PM/PEO Paladin/FAASV : Picatinny	19.135	1.335	Jul 2018	-		-		-		-	0.000	20.470	-
Subtotal			19.135	1.335		-		-		-		-	0.000	20.470	N/A
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
System Level Testing	MIPR	Various OGAs : Various	64.594	-		-		-		-		-	0.000	64.594	-
Subtotal			64.594	-		-		-		-		-	0.000	64.594	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			253.465	5.868		0.000		-		-		-	0.000	259.333	N/A

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	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract	
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 0210609A / <i>Paladin Integrated Management (PIM)</i>		Project (Number/Name) ED8 / <i>Paladin Integrated Management (PIM)</i>

Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024							
	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				
Low Rate Initial Production Deliveries																																
IOTE 2																																
Full Rate Production Decision																																

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2020 Army			<b>Date:</b> March 2019
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0210609A / <i>Paladin Integrated Management (PIM)</i>	<b>Project (Number/Name)</b> ED8 / <i>Paladin Integrated Management (PIM)</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Contractor Testing	4	2012	4	2015
Government Development Test	4	2012	3	2017
Low Rate Initial Production Contract	1	2014	2	2016
Low Rate Initial Production Deliveries	2	2015	1	2020
Full Up System Live Fire Test	3	2015	1	2017
IOTE 2	2	2018	2	2018
Full Rate Production Decision	1	2020	1	2020
TM Verification	2	2016	1	2017
FUE Net	1	2017	2	2017
Delta TM Verification	4	2017	4	2017