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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 0203743A I 155MM Self-Propelled Howitzer Improvements							
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	-	0.000	0.000	40.784	-	40.784	42.137	35.391	23.472	0.000	0.000	141.784
FF9: PIM Improvement Program	-	0.000	0.000	40.784	-	40.784	42.137	35.391	23.472	0.000	0.000	141.784

Note

The PIM improvement program is a new start effort.

A. Mission Description and Budget Item Justification

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018 Base</u>	<u>FY 2018 OCO</u>	<u>FY 2018 Total</u>
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	40.784	-	40.784
Total Adjustments	0.000	0.000	40.784	-	40.784
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	0.000	0.000	40.784	-	40.784

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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 0203743A / 155MM Self-Propelled Howitzer Improvements				Project (Number/Name) FF9 / PIM Improvement Program			
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
FF9: PIM Improvement Program	-	0.000	0.000	40.784	-	40.784	42.137	35.391	23.472	0.000	0.000	141.784
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The current Paladin Integrated Management (PIM) is an ACAT1C Acquisition program. The PIM improvement program is intended to address the current Howitzer capability gap based on a capability needs assessment performed by the user community to restore indirect fires support overmatch to the US Army. This effort will evaluate developing technologies to determine which configuration will add optimal value to the Army. This effort may include but is not limited to the integration of a new cannon, gun mount, gun drive systems, fire control systems and autoloader into the M109A7 Howitzer. Analysis will be required to evaluate the impact of the new cannon technology on current platform chassis, cab, suspension, mobility, and electronic architecture. This evaluation will be the foundation for this Engineering Change Proposal (ECP) and further inform the level of effort needed to integrate this capability into the current SPHS. This program is a new start in FY18.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2016	FY 2017	FY 2018
Title: PIM Improvement Program Description: Funding is provided for the following efforts: FY 2018 Plans: Will conduct a Cost Benefit Analysis (CBA) comparing several different packages of upgrades for the M109A7. Each upgrade package will be evaluated for cost, technology readiness and added performance. At the conclusion of the CBA the Army will be better informed to choose a path which can be sole source with the current vendor, open competition, or continue with government development through Engineering Manufacturing Development (EMD). This work effort is to pursue Objective Indirect Fire Range Requirement in the current M109 FOV Capability Production Document (CPD). The effort will address increased range requirements from a holistic development process. Program will focus on gun mount, breech, tube, and fire control. It will be designed around M109A7 objective requirements for range. It is intended to address capability gaps as identified by the Army Chief of Staff.	-	-	40.784
Accomplishments/Planned Programs Subtotals	-	-	40.784

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

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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 0203743A / 155MM Self-Propelled Howitzer Improvements	Project (Number/Name) FF9 / PIM Improvement Program
D. Acquisition Strategy PdM Self Propelled Howitzer will conduct a Cost Benefit Analysis (CBA) comparing several different packages of upgrades for the M109A7. Each upgrade package will be evaluated for cost, technology readiness and added performance. At the conclusion of the CBA the Army will be better informed to choose a path which can be sole source with the current vendor, open competition, or continue with government development through Engineering Manufacturing Development (EMD).		
E. Performance Metrics N/A		

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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 0203743A / 155MM Self-Propelled Howitzer Improvements						Project (Number/Name) FF9 / PIM Improvement Program					
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
PIM Improvement Program	C/TBD	To Be Determined : To Be Determined	0.000	-		-		38.784	Jun 2018	-		38.784	0.000	38.784	0.000
Subtotal			0.000	-		-		38.784		-		38.784	0.000	38.784	0.000
Support (\$ 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
PMO/PEO Support	Various	PM/PEO PIM : Picatinny	0.000	-		-		2.000	Dec 2017	-		2.000	0.000	2.000	0.000
Subtotal			0.000	-		-		2.000		-		2.000	0.000	2.000	0.000
			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			0.000	-		0.000		40.784		-		40.784	0.000	40.784	-
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 0203743A / 155MM Self-Propelled Howitzer Improvements								Project (Number/Name) FF9 / PIM Improvement Program										
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
TEMP Development																												
Engineering & Manufacturing Development (EMD)																												
Systems Engineering Plan (SEP)																												
Preliminary Design Review (PDR)																												
Critical Design Review (CDR)																												
(1) CPD Complete																												
Acquisition Development Start																												
TDP Development																												
Prototype Build																												
Life Cycle Sustainment Plan (LCSP) Complete																												
Test																												
System Verification Review (SVR)																												

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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 0203743A / 155MM Self-Propelled Howitzer Improvements	Project (Number/Name) FF9 / PIM Improvement Program	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TEMP Development	1	2020	3	2020
Engineering & Manufacturing Development (EMD)	3	2018	1	2024
Systems Engineering Plan (SEP)	4	2017	4	2017
Preliminary Design Review (PDR)	2	2019	2	2019
Critical Design Review (CDR)	2	2020	2	2020
CPD Complete	1	2017	1	2017
Acquisition Development Start	2	2018	3	2018
TDP Development	4	2018	2	2020
Prototype Build	4	2019	3	2020
Life Cycle Sustainment Plan (LCSP) Complete	3	2020	3	2020
Test	4	2020	1	2025
System Verification Review (SVR)	4	2022	4	2022