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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army	Date: May 2017
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0203802A / Other Missile Product Improvement Programs							
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	-	49.191	8.571	5.000	-	5.000	15.000	15.000	15.000	15.000	0.000	122.762
045: Hellfire Prod Imp Prog	-	5.165	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.165
788: ATACMS PIP	-	0.000	0.000	5.000	-	5.000	15.000	15.000	15.000	15.000	0.000	65.000
DZ9: ATACMS Mods	-	44.026	7.491	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51.517
VT9: Lethal Miniature Aerial Missile System (LMAMS)	-	0.000	1.080	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.080

A. Mission Description and Budget Item Justification

Army Tactical Missile System (ATACMS) is the United States (U.S.) Army's primary all-weather, surface-to-surface long-range artillery precision guided missile used by Combatant Commanders to shape the battlefield with long-range fires against hard & soft targets in open, complex, and urban environments.

788: ATACMS Product Improvement Program (PIP) focuses on safety, cost reduction, reliability, deficiency corrections, standardization, and new or improved operational capabilities. FY18 Base funds in the amount of \$5.000 million supports operational testing, corrections of identified deficiencies, and fielding support activities for a Height-of-Burst capability via proximity sensor.

DZ9: ATACMS Mods effort will not build any new missiles or add to the overall inventory. Block (BLK) I/IA ATACMS currently have warheads that are non-compliant with the 2008 Department of Defense (DoD) policy on cluster munitions (CM). Starting with a BLK I/IA missile, this modification effort will integrate, test, and qualify an ATACMS configuration to include a policy compliant warhead, obsolescence refresh, and re-grained rocket motors. Performance of a characterization effort will include qualification and flight testing to assess ATACMS performance with inclusion of a proximity sensor. Additional efforts include launcher updates to enable firing of the new ATACMS configuration. There is no FY18 funding.

VT9: Lethal Miniature Aerial Missile System (LMAMS) develops, integrates, and tests the Switchblade Multi-Pack Launcher (MPL). Multi-Pack Launcher provides the capability to launch up to 6 Switchblade missiles remotely in a Force Protection Environment. The mission for the MPL is to be placed in a Forward Operating Base (FOB) in a constant ready-to-use state to enable Soldiers to remain in the safety of a building while launching Switchblade missiles. There is no FY18 funding.

045: Hellfire Prod Imp Prog integrates the Longbow 7A missile, which provides increased seeker capability to acquire and attack a wider variety of targets, and integrates a blast fragmentation sleeve and proximity fuse to increase lethality onto the MQ-1 Gray Eagle Unmanned Aerial Vehicle (UAV). In addition, this program supports the integration with missile technical and software support from both the Federal government and the Longbow prime contractor and the upgrade of a limited number of Longbow missiles for integration testing. There is no FY18 funding.

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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0203802A / Other Missile Product Improvement Programs			
B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	35.951	7.491	0.000	-	0.000
Current President's Budget	49.191	8.571	5.000	-	5.000
Total Adjustments	13.240	1.080	5.000	-	5.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.165	-			
• SBIR/STTR Transfer	-1.425	-			
• Adjustments to Budget Years	0.000	0.000	5.000	-	5.000
• Amended FY2017	0.000	1.080	0.000	-	0.000
• Other Adjustments 1	9.500	0.000	0.000	-	0.000
Change Summary Explanation					
FY 2016 funding change due to actual year end correction.					
FY 2017 funding change is due to the Development/Integration and Testing of the LMAMS Multi-Pack Launcher.					
FY 2018 funding change due to incorporation of PIP initiatives to include operational testing of a Height-of-Burst capability.					

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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 0203802A / Other Missile Product Improvement Programs				Project (Number/Name) 045 / Hellfire Prod Imp Prog			
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
045: Hellfire Prod Imp Prog	-	5.165	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.165
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Hellfire Prod Imp Prog integrates the Longbow 7A missile, which provides increased seeker capability to acquire and attack a wider variety of targets, and integrates a blast fragmentation sleeve and proximity fuse to increase lethality onto the MQ-1 Gray Eagle Unmanned Aerial Vehicle (UAV). In addition, this program supports the integration with missile technical and software support from both the Federal government and the Longbow prime contractor and the upgrade of a limited number of Longbow missiles for integration testing.

There is no FY18 funding.

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

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Integration and Simulation efforts of HELLFIRE Longbow Missile onto the Gray Eagle Platform	5.165	-	-	-	-
Description: Hellfire Prod Imp Prog integrates the Longbow 7A missile, which provides increased seeker capability to acquire and attack a wider variety of targets, and integrates a blast fragmentation sleeve and proximity fuse to increase lethality onto the MQ-1 Gray Eagle Unmanned Aerial Vehicle (UAV). In addition, this program supports the integration with missile technical and software support from both the Federal government and the Longbow prime contractor and the upgrade of a limited number of Longbow missiles for integration testing.					
FY 2016 Accomplishments: Began and continue to integrate the HELLFIRE Longbow Missile onto the Gray Eagle Unmanned Ariel Vehicle system.					
Accomplishments/Planned Programs Subtotals	5.165	-	-	-	-

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

Remarks

D. Acquisition Strategy
N/A

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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 0203802A / Other Missile Product Improvement Programs	Project (Number/Name) 045 / Hellfire Prod Imp Prog
E. Performance Metrics N/A		

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0203802A / Other Missile Product Improvement Programs				Project (Number/Name) 788 / ATACMS PIP			
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
788: ATACMS PIP	-	0.000	0.000	5.000	-	5.000	15.000	15.000	15.000	15.000	0.000	65.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification ATACMS Product Improvement Program (PIP) focuses on safety, cost reduction, reliability, deficiency corrections, standardization, and new or improved operational capabilities. FY18 Base funds in the amount of \$5.000 million supports operational testing, corrections of identified deficiencies, and fielding support activities for a Height-of-Burst capability via proximity sensor. (FY19 thru FY22 funds will focus on Height-of-Burst, GPS M-Code, Insensitive Munitions and other evolving capabilities.)												
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	
Title: Product Improvement Program (PIP) Activities							-	-	5.000	-	5.000	
Description: PIP focuses on safety, cost reduction, reliability, deficiency corrections, standardization, and new or improved operational capabilities for ATACMS.												
FY 2018 Base Plans: Develop Test & Evaluation Master Plan (TEMP) for Height-of-Burst capability, conduct OT assuming existing ATACMS test quantities are sufficient, and initiate activities for production cut-in and fielding.												
Accomplishments/Planned Programs Subtotals							-	-	5.000	-	5.000	
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy After successful OT and DOT&E approval is received for the height-of-burst capability, a proximity sensor will be inserted into the ongoing ATACMS SLEP production. Future improvements, such as M-code and other capabilities, will be inserted into future production once those technologies are matured, tested, and approved for fielding. E. Performance Metrics N/A												

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0203802A / Other Missile Product Improvement Programs				Project (Number/Name) DZ9 / ATACMS Mods			
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
DZ9: ATACMS Mods	-	44.026	7.491	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51.517
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Army Tactical Missile System (ATACMS) is the United States (U.S.) Army's primary 24/7, all-weather, and surface-to-surface artillery precision missile used by current and future Combatant Commanders to shape the battlefield with long-range fires against hard and soft stationary targets in open, complex, and urban environments. This effort will not build any new missiles or add to the overall inventory. Block (BLK) I/IA ATACMS currently have warheads that are non-compliant with the 2008 Department of Defense (DoD) policy on cluster munitions (CM). Starting with a BLK I/IA missile, this modification effort will integrate, test, and qualify an ATACMS configuration to include a policy compliant warhead, obsolescence refresh, and re-grained rocket motors. Performance of a characterization effort will include qualification and flight testing to assess ATACMS performance with inclusion of a proximity sensor. Additional efforts include launcher updates to enable firing of the new ATACMS configuration.												
There is no FY18 funding.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Conduct Development Engineering, Design Component Testing, and Performance Analysis.								44.026	7.491	-	-	-
Description: Develop and qualify obsolescence updates, build-up of flight test missiles, perform component and system flight testing, and characterize proximity sensor performance.												
FY 2016 Accomplishments: Completion of component hardware build up and integration into completed missiles. Performance Analysis to include ground and flight testing.												
FY 2017 Plans: Completion of the ground and flight testing												
Accomplishments/Planned Programs Subtotals								44.026	7.491	-	-	-
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	
• ATACMS MODS:	20.119	150.043	62.668	114.168	176.836	0.217	-	-	-	0.000	347.215	
ATACMS MODS (CA6700)												

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Appropriation/Budget Activity 2040 / 7				R-1 Program Element (Number/Name) PE 0203802A / Other Missile Product Improvement Programs				Project (Number/Name) DZ9 / ATACMS Mods			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2018</u>	<u>FY 2018</u>	<u>FY 2018</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Complete</u>	<u>Total Cost</u>
<u>Remarks</u>											
D. Acquisition Strategy											
The ATACMS MOD program will qualify a new configuration needed to support follow-on production in order to maintain critical inventory levels. Lockheed Martin Missile and Fire Control (LMMFC) will integrate and test ATACMS MOD under a Cost Plus Fixed Fee (CPFF) contract.											
E. Performance Metrics											
N/A											

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0203802A / Other Missile Product Improvement Programs				Project (Number/Name) VT9 / Lethal Miniature Aerial Missile System (LMAMS)			
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
VT9: Lethal Miniature Aerial Missile System (LMAMS)	-	0.000	1.080	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.080
Quantity of RDT&E Articles	-	-	3	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification VT9: Lethal Miniature Aerial Missile System (LMAMS) develops, integrates, and tests the Switchblade Multi-Pack Launcher (MPL). Multi-Pack Launcher provides the capability to launch up to 6 Switchblade missiles remotely in a Force Protection Environment. The mission for the MPL is to be placed in a Forward Operating Base (FOB) in a constant ready-to-use state to enable Soldiers to remain in the safety of a building while launching Switchblade missiles.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Develop, Integrate and Test the LMAMS Multi-Pack Launcher Description: Development, Integration, and Testing of the Multi-Pack Launcher (MPL). Multi-Pack Launcher provides the capability to launch up to 6 Switchblades remotely in a Force Protection Environment. FY 2017 Plans: Product Development, Integration Qualification, and Safety Test Planning/Preparation.								-	1.080	-	-	-
Accomplishments/Planned Programs Subtotals								-	1.080	-	-	-
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy All contractor funds are planned to be awarded via sole source contract to Aerovironment. Remaining funding is planned for CCWS Program Management costs, test facility costs, range costs, and test support personnel. E. Performance Metrics N/A												