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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army	Date: February 2018
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					PE 0605450A / Joint Air-to-Ground Missile (JAGM)							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	47.446	34.626	11.773	-	11.773	2.966	1.977	0.000	0.000	0.000	98.788
JA6: Joint Air-To-Ground Missile (JAGM)	-	47.446	34.626	11.773	-	11.773	2.966	1.977	0.000	0.000	0.000	98.788

Program MDAP/MAIS Code: 355

A. Mission Description and Budget Item Justification

The Joint Air-to-Ground Missile (JAGM) program is an Army-led, Acquisition Category (ACAT) IC Major Defense Acquisition Program (MDAP) with joint interest with the U.S. Marine Corps (USMC) and U.S. Navy. The JAGM is the next generation of aviation-launched, fire and forget missiles to replace the HELLFIRE Laser and Longbow radar missiles. JAGM will be used by joint service aircraft for destruction of high value stationary, moving, and relocatable land and maritime targets from standoff range in day, night, adverse weather, and obscured battlefield conditions.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>
Previous President's Budget	42.972	34.626	11.900	-	11.900
Current President's Budget	47.446	34.626	11.773	-	11.773
Total Adjustments	4.474	0.000	-0.127	-	-0.127
• Congressional General Reductions	-0.019	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	6.000	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-1.507	-	-	-	-
• Adjustments to Budget Years	-	-	-0.127	-	-0.127

Change Summary Explanation

The FY 2017 \$6.000 million funding increase supports improved lethality and range
The FY 2017 \$1.507 million funding decrease reflects SBIR/STTR transfer
The FY 2017 \$0.019 million Congressional General Reduction supports FFRDC
The FY 2019 \$0.127 million funding decrease due to DA Reprogramming

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605450A / Joint Air-to-Ground Missile (JAGM)				Project (Number/Name) JA6 / Joint Air-To-Ground Missile (JAGM)			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
JA6: Joint Air-To-Ground Missile (JAGM)	-	47.446	34.626	11.773	-	11.773	2.966	1.977	0.000	0.000	0.000	98.788
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Air-to-Ground Missile (JAGM) program is an Army-led, Acquisition Category (ACAT) IC Major Defense Acquisition Program (MDAP) with joint interest with the U.S. Marine Corps (USMC) and U.S. Navy. The JAGM is the next generation of aviation-launched, fire and forget missiles to replace the HELLFIRE Laser and Longbow radar missiles. JAGM will be used by joint service aircraft for destruction of high value stationary, moving, and relocatable land and maritime targets from standoff range in day, night, adverse weather, and obscured battlefield conditions.

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

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Engineering and Manufacturing Development (EMD) Contract Description: The JAGM prime contractor is conducting on-going qualification of the production line, and will deliver missiles to support Developmental and Limited User Testing (LUT). The prime contractor will support government-led activities to qualify the JAGM on the AH-64 Apache.	2.881	-	-	-	-
Title: Engineering and Manufacturing Development (EMD) Qualification of JAGM and Apache Integration Description: The Government will conduct developmental testing and qualification of the JAGM system, integration onto Apache AH-64E aircraft, lethality modeling, simulation, and effectiveness evaluation. FY 2018 Plans: The JAGM Product Office and Other Government Agencies (OGAs) will complete developmental and integration Test and Evaluation (T&E), including LUT, live-fire, initial integrated solution Apache AH-64E flight test, using hardware delivered from the prime contractor. The data will support System Evaluation, Milestone C, and Full Material Release (FMR). FY 2018 to FY 2019 Increase/Decrease Statement: JAGM EMD phase and related activities will complete at Milestone C.	26.003	7.730	-	-	-
Title: Systems Engineering and Milestone (MS) C Preparation Description: The JAGM Product Office will complete all documentation, conduct evaluations, reviews and analyses to support a FY 2018 Milestone C decision and exercise EMD Contract LRIP options.	14.862	6.370	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions)				FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: The program will complete document development, government testing and systems engineering in support of a MS C decision, per DoD 5000.02 and AR 70-1 guidance.								
FY 2018 to FY 2019 Increase/Decrease Statement: JAGM EMD phase and related activities will complete at Milestone C.								
Title: Full Rate Production (FRP) Decision Preparation				-	2.500	3.118	-	3.118
Description: The JAGM Product Office will confirm that JAGM is producible, as well as operable, safe, and logistically supportable.								
FY 2018 Plans: The JAGM Product will develop all FRP and FMR documentation, conduct review and perform analyses, and conduct government testing to support a FRP decision.								
FY 2019 Base Plans: The JAGM Product Office will conduct government testing and Full Materiel Release (FMR) documentation to support a FRP decision.								
FY 2018 to FY 2019 Increase/Decrease Statement: Funding increase from FY 2018 to FY 2019 to complete FRP documentation and prepare for Milestone C (FRP Decision Review).								
Title: Post Milestone C Developmental, Integrated, and Operational Testing				-	10.526	7.892	-	7.892
Description: The JAGM Product Office will demonstrate JAGM Operational Suitability and Effectiveness with AH-64.								
FY 2018 Plans: The JAGM Product Office and OGAs will conduct Live Fire T&E, verify AH-64 software integration with JAGM Pilot Vehicle Interface (PVI) through captive carry and JAGM flight tests, regression flight tests, environmental and ground launch tests for Safety Release and Airworthiness Release, and Apache-launched flight tests in preparation for IOT&E, FRP decision review, and to support other platform integration.								
FY 2019 Base Plans:								

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B. Accomplishments/Planned Programs (\$ in Millions)				FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
The JAGM Product Office and OGAs will complete Live Fire T&E, verify AH-64 software integration with JAGM PVI through captive carry and JAGM flight tests, regression flight tests, environmental and ground launch tests for Safety Release and Airworthiness Release, and Apache-launched flight tests in preparation for IOT&E, and support other platform integration. Data will also support FRP decision review and FMR.								
FY 2018 to FY 2019 Increase/Decrease Statement: Funding decrease from FY 2018 to FY 2019 for Post Milestone C Developmental, Integrated, and Operational Testing in support of FRP decision.								
Title: Apache AH-64 and JAGM Software Integration Description: Provides full JAGM capability on E-model Apaches				3.700	7.500	-	-	-
FY 2018 Plans: The Apache Project Office, by way of Boeing Company, will develop and provide Pilot-Vehicle interface (PVI) capability that is required for seamless JAGM integration on the Apache platform.								
FY 2018 to FY 2019 Increase/Decrease Statement: Funding decrease from FY 2018 to FY 2019 due to the completion of Apache software integration.								
Title: Integration and Threat Management Description: The Joint Air-to-Ground (JAGM) Product Office will conduct objective platform review, analysis and threat management.				-	-	0.763	-	0.763
FY 2019 Base Plans: The JAGM Product Office will manage and mitigate risk against emerging threats and conduct review and analysis of objective platforms.								
FY 2018 to FY 2019 Increase/Decrease Statement: Funding allocated to address emerging threats and conduct review and analysis of objective platforms to include technical assessments, concept studies and risk reduction.								
Accomplishments/Planned Programs Subtotals				47.446	34.626	11.773	-	11.773

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Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0605450A / <i>Joint Air-to-Ground Missile (JAGM)</i>				Project (Number/Name) JA6 / <i>Joint Air-To-Ground Missile (JAGM)</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• C70302: <i>Joint Air-to-Ground MSLS (JAGM)</i>	61.911	178.432	276.462	-	276.462	293.589	302.019	305.112	414.099	0.000	1,831.624
• 0605450N: <i>Navy JAGM Missile RDT&E</i>	17.880	15.473	7.086	-	7.086	0.242	0.269	0.276	0.282	Continuing	Continuing
• 0206138M: <i>Navy JAGM Missile Procurement</i>	21.922	3.789	24.374	5.692	30.066	24.379	49.872	50.869	76.886	1,302.797	1,560.580
Remarks BY 2015											
D. Acquisition Strategy The JAGM EMD acquisition approach outlines the plan to complete developmental testing to qualify the All Up Round (AUR) and the contractor production line, and to integrate JAGM on the U.S. Army AH-64E Apache. Advance Procurement of long lead items (HELLFIRE Romeo backends and Guidance Section subsystems) occurs in FY 2016 - FY 2017. This long lead procurement is needed to facilitate Low Rate Initial Production (LRIP) I, which is necessary to achieve Initial Operational Capability (IOC), and LRIP II.											
E. Performance Metrics N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0605450A / Joint Air-to-Ground Missile (JAGM)				Project (Number/Name) JA6 / Joint Air-To-Ground Missile (JAGM)					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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 Eng/ Project Management	C/LH	Various : Performers	63.631	14.862	Oct 2016	12.230	Oct 2017	3.881	Oct 2018	-		3.881	0.000	94.604	-
Subtotal			63.631	14.862		12.230		3.881		-		3.881	0.000	94.604	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Technology Development Prime Contract	C/FFP	TD : Prime Contract	371.319	-		-		-		-		-	0.000	371.319	-
Rocket Motor Insensitive Munition (IM) Qualification	C/CPFF	Defense Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	39.731	-		-		-		-		-	0.000	39.731	-
Electro-Mechanical Control Actuator System (EMCAS)	C/CPFF	Defense Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	4.033	-		-		-		-		-	0.000	4.033	-
Integrated Warhead	C/CPFF	Defense Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	2.982	-		-		-		-		-	0.000	2.982	-
EMD Long Lead Contract (Backends)	SS/FFP	Lockheed Martin : Orlando, FL	8.082	-		-		-		-		-	0.000	8.082	-
Development Engineering	C/LH	Various : Performers	21.648	-		-		-		-		-	0.000	21.648	-
EMD Prime Contract	C/FPIF	Lockheed Martin : Orlando, Florida	64.360	2.881	May 2017	-		-		-		-	0.000	67.241	-
Apache Indefinite Delivery/ Indefinite Quantity (IDIQ) Contract	C/CPFF	Boeing Company : Mesa, AZ	7.900	3.700	Jul 2017	7.500	Dec 2017	-		-		-	0.000	19.100	-
Subtotal			520.055	6.581		7.500		-		-		-	0.000	534.136	N/A

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Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Remarks (C / FFP) - Competitive/Firm Fixed Price (C / CPFF) - Competitive/Cost-Plus Fixed Fee (C / LH) - Competitive/Labor Hour (SS / FFP) - Sole Source/Firm Fixed Price (C / FPIF) - Competitive/Fixed Price Incentive (Firm Target) Apache IDIQ FY 2018 Contract Award date moved from December 2017 to February 2018															
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Other Gov Agencies	C/LH	Various : Performers	80.859	26.003	Nov 2016	14.896	Nov 2018	7.892	Nov 2018	-		7.892	0.000	129.650	-
Subtotal			80.859	26.003		14.896		7.892		-		7.892	0.000	129.650	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			664.545	47.446		34.626		11.773		-		11.773	0.000	758.390	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0605450A / Joint Air-to-Ground Missile (JAGM)		Project (Number/Name) JA6 / Joint Air-To-Ground Missile (JAGM)	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
EMD																												
Army System & Integration Testing																												
Limited User Testing (LUT)																												
MS C Decision																												
Initial Operational Test & Evaluation (IOT&E)																												
Full Rate Production (FRP) Decision																												
Software Upgrade Against Emerging Threats																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605450A / <i>Joint Air-to-Ground Missile (JAGM)</i>	Project (Number/Name) JA6 / <i>Joint Air-To-Ground Missile (JAGM)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Final Design and Design Verification Test	2	2013	1	2014
Component Qualification Testing	2	2014	4	2014
System Qualification Testing	3	2014	4	2015
MS Decision Preparation	1	2013	4	2015
EMD	4	2015	3	2018
Army System & Integration Testing	4	2015	3	2018
Limited User Testing (LUT)	2	2018	2	2018
MS C Decision	3	2018	3	2018
Initial Operational Test & Evaluation (IOT&E)	2	2019	2	2019
Full Rate Production (FRP) Decision	4	2019	4	2019
Software Upgrade Against Emerging Threats	1	2020	4	2039