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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605450N I Joint Air-to-ground Missile (JAGM)							
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	175.806	25.640	17.880	15.473	-	15.473	7.086	0.242	0.269	0.276	Continuing	Continuing
2211: Joint Air-to-Ground Missile	175.806	25.640	17.880	15.473	-	15.473	7.086	0.242	0.269	0.276	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P355												
A. Mission Description and Budget Item Justification												
<p>The Joint Air-to-Ground Missile (JAGM) is an air-launched missile system that will utilize dual-mode seeker technology providing advanced line-of-sight and beyond-line-of-sight capabilities, including precision point and fire-and-forget seeker targeting and increased lethality against soft, hardened, moving, stationary, land, maritime threats. JAGM will additionally provide robust capability in adverse weather day or night and in obscured/countermeasure environments. The JAGM Increment 1 system will replace aviation-launched; tube-launched, optically-tracked, wire-guided, and Helicopter Launched Fire-&-Forget Missile System (HELLFIRE). JAGM is an Army-led joint program that addresses rotary wing, fixed wing, and unmanned aerial vehicle requirements. The Department of Navy threshold platform is the AH-1Z. The JAGM system includes missile, trainers, container, support equipment and software modifications to the M-299 launcher.</p> <p>The JAGM program is part of the Navy's Integrated Fire Control (IFC) approach to address advanced threat capabilities in the Anti-Access/Area-Denial (A2AD) environment. IFC solutions enable individual system capabilities to be leveraged across an effects chain, placing the full spectrum of tactical capability in the hands of the warfighter. IFC solutions that push engagement distances beyond the launch platform's radar horizon and allows the United States Navy to operate in, and control, contested battle space in littoral waters and A2/AD environments are increasingly critical as more and more scenarios require compressed and coordinated fire control timelines.</p> <p>JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under system development and demonstration because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.</p>												

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1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0605450N / Joint Air-to-ground Missile (JAGM)			
B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	25.898	17.880	15.834	-	15.834
Current President's Budget	25.640	17.880	15.473	-	15.473
Total Adjustments	-0.258	0.000	-0.361	-	-0.361
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.261	0.000			
• SBIR/STTR Transfer	-0.520	0.000			
• Program Adjustments	0.000	0.000	-0.990	-	-0.990
• Rate/Misc Adjustments	0.001	0.000	0.629	-	0.629
Change Summary Explanation					
The FY 2018 funding request was reduced by \$0.990 million to account for the availability of prior year execution balances.					
Schedule: The JAGM acquisition milestones were changed as a result of production delays affecting the test asset deliveries. Milestone C was changed from 4Q FY2017 to 3Q FY2018. FRP was changed from 3Q FY2019 to 4Q FY2019, and IOC was changed from 4Q FY2019 to 2Q FY2020. In concurrence, there were changes to the test and evaluation and production milestones to align with the revised Milestone C and FRP dates.					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605450N / Joint Air-to-ground Missile (JAGM)				Project (Number/Name) 2211 / Joint Air-to-Ground Missile			
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
2211: Joint Air-to-Ground Missile	175.806	25.640	17.880	15.473	-	15.473	7.086	0.242	0.269	0.276	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: P355												
A. Mission Description and Budget Item Justification												
The Joint Air-to-Ground Missile (JAGM) is an air-launched missile system that will utilize dual-mode seeker technology providing advanced line-of-sight and beyond-line-of-sight capabilities, including precision point and fire-and-forget seeker targeting and increased lethality against soft, hardened, moving, stationary, land, maritime threats. JAGM will additionally provide robust capability in adverse weather day or night and in obscured/countermeasure environments. The JAGM Increment 1 system will replace aviation-launched; tube-launched, optically-tracked, wire-guided, and Helicopter Launched Fire-&-Forget Missile System (HELLFIRE). Later increments of JAGM will be fixed wing compatible. JAGM is an Army-led joint program that addresses rotary wing, fixed wing and unmanned aerial vehicle requirements. The Department of Navy threshold platform is the AH-1Z. The JAGM system includes missile, trainers, container, support equipment and software modifications to the M-299 launcher.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: JAGM Engineering and Manufacturing Development (EMD) Phase Articles: FY 2016 Accomplishments: FY 2016 funding supports AH-1Z software development, test and integration, platform airworthiness analysis/testing, test planning/execution, procurement of test and integration hardware, acquisition and buildup of test articles, future technology insertion, and joint cost and schedule planning for EMD, Milestone C and Low Rate Initial Production (LRIP). FY 2017 Plans: FY 2017 plans include continued execution of EMD phase and AH-1Z integration activities, including continued airworthiness certification and software development. AH-1Z software development and test efforts will continue in support of fleet software release planned for the FY 2020 Initial Operational Capability (IOC). FY 2018 Base Plans: FY 2018 plans include continued execution of EMD phase and AH-1Z integration activities, including continued airworthiness certification, software development, fixed wing studies & analysis, Developmental Testing (DT), Integration Testing (IT), and a planned DT assist period to support Milestone C. AH-1Z software development								25.640	17.880	15.473	0.000	15.473
								8	-	-	-	-

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605450N / Joint Air-to-ground Missile (JAGM)		Project (Number/Name) 2211 / Joint Air-to-Ground Missile	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
and test efforts will continue in support of fleet software release planned for the FY 2020 Initial Operational Capability (IOC).					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	25.640	17.880	15.473	0.000	15.473

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018 Base</u>	<u>FY 2018 OCO</u>	<u>FY 2018 Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDT&E ARMY, 0605450A: JAGM	83.100	43.000	34.600	-	34.600	11.900	3.000	2.000	0.000	Continuing	Continuing
• MPA, ARMY, C70302: JAGM	27.738	101.851	178.400	-	178.400	253.118	211.806	292.770	186.931	3,433.500	4,686.114
• WPN, NAVY, 2248: JAGM	0.000	26.200	3.789	-	3.789	24.374	24.379	49.872	50.869	1,375.405	1,554.888

Remarks

D. Acquisition Strategy
The Joint Air-to-Ground Missile (JAGM) system is an ACAT-1D Joint Army/Navy Major Defense Acquisition Program (MDAP) with the Army designated as lead service. Milestone B was achieved in July 2015 with Milestone C planned for 3QFY 2018. The Engineering, Manufacturing and Development contract was a full and open competition and was awarded July 2015. The vendor, Lockheed Martin, is responsible for the production of a technically mature and fully producible JAGM Guidance Section (GS) as well as the integration of the GS with the current HELLFIRE-R missile warhead and motor section for Increment 1 capability. The Army is responsible for the development and production of the JAGM missile and integration on the AH-64 Apache. The Navy is responsible for integration of the JAGM on the United States Marine Corps AH-1Z with an Initial Operational Capability (IOC) in FY 2020.

E. Performance Metrics
Milestone C in FY 2018; IOC in FY 2020

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605450N / Joint Air-to-ground Missile (JAGM)					Project (Number/Name) 2211 / Joint Air-to-Ground Missile				
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
Systems Engineering	WR	NAWCWD : China Lake, CA	46.931	2.541	Nov 2015	1.907	Nov 2016	1.014	Nov 2017	-		1.014	2.700	55.093	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.605	0.997	Nov 2015	0.637	Dec 2016	0.459	Nov 2017	-		0.459	1.299	3.997	-
Aircraft Integration	WR	NAWCAD : Patuxent River, MD	9.098	0.739	Nov 2015	0.600	Dec 2016	0.563	Nov 2017	-		0.563	0.524	11.524	-
Aircraft Integration (AH-1Z)	Various	NAWCWD : China Lake, CA	3.418	2.800	Nov 2015	2.191	Mar 2017	2.040	Nov 2017	-		2.040	5.479	15.928	-
Contractor Aircraft Integration (AH-1Z)	Various	Northrup Grumman : Woodlawn Hills, CA	0.000	4.958	Nov 2016	7.601	Jul 2017	3.436	Jul 2018	-		3.436	0.000	15.995	-
Integration & Test	Various	JAMS : Huntsville, AL	25.801	3.169	Mar 2016	1.484	Mar 2017	1.576	Jan 2018	-		1.576	1.716	33.746	-
Contractor Integration & Test	C/FPIF	Lockheed Martin : Orlando, FL	4.300	8.648	Mar 2016	0.500	Feb 2017	0.000		-		0.000	0.000	13.448	13.448
Studies and Analysis	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.600	Nov 2017	-		0.600	0.200	0.800	-
Prior year cost Prod Dev no longer funded in the FYDP	Various	Various : Various	11.555	0.000		0.000		0.000		-		0.000	0.000	11.555	-
Subtotal			101.708	23.852		14.920		9.688		-		9.688	11.918	162.086	-
Remarks															
Contractor Aircraft Integration (AH-1Z) - Funding in this line includes software support associated with the integration of JAGM on the AH-1Z.															
Integration & Test - Funding in this line includes integration & test support, modeling & simulation and telemetry kits.															
Contractor Integration & Test - Funding in this line includes hardware and support associated with the Engineering and Manufacturing Development (EMD) contract.															
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
Integrated Logistics Support	WR	NAWCWD : China Lake, CA	0.030	0.218	Mar 2016	0.452	Nov 2016	0.163	Nov 2017	-		0.163	0.278	1.141	-

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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
Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.000	0.087	Mar 2016	0.075	Dec 2016	0.076	Nov 2017	-		0.076	0.153	0.391	-
Prior year Support cost no longer funded in the FYDP	Various	Various : Various	12.447	0.000		0.000		0.000		-		0.000	0.000	12.447	-
Subtotal			12.477	0.305		0.527		0.239		-		0.239	0.431	13.979	-
Test and Evaluation (\$ 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
Test & Evaluation	Various	NAWCAD : Patuxent River, MD	3.786	0.329	Apr 2016	0.930	Mar 2017	0.451	Nov 2017	-		0.451	1.958	7.454	-
Test & Evaluation	Various	NAWCWD : China Lake, CA	0.000	0.000		0.000		2.043	Nov 2017	-		2.043	0.127	2.170	-
Test & Evaluation	Various	USAF : Eglin AFB, FL	0.000	0.000		0.000		1.121	Dec 2017	-		1.121	0.296	1.417	-
Test & Evaluation	Various	Various : Various	0.000	0.000		0.235	Nov 2016	0.639	Nov 2017	-		0.639	0.000	0.874	-
Prior year T&E cost no longer funded in the FYDP	Various	Various : Various	41.328	0.000		0.000		0.000		-		0.000	0.000	41.328	-
Subtotal			45.114	0.329		1.165		4.254		-		4.254	2.381	53.243	-
Management Services (\$ 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
Contr Eng Supt - ETS (NONFFRDC)	Various	Various : Various	1.926	0.927	Nov 2015	0.918	Feb 2017	0.936	Feb 2018	-		0.936	0.808	5.515	-
Management Services	Various	NAWCAD : Patuxent River, MD	14.119	0.154	Dec 2015	0.290	Nov 2016	0.296	Nov 2017	-		0.296	0.592	15.451	-
Travel	Various	NAWCAD : Patuxent River, MD	0.462	0.073	Oct 2015	0.060	Oct 2016	0.060	Oct 2017	-		0.060	Continuing	Continuing	Continuing

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Management Services (\$ 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
Prior year Mngt Svcs cost no longer funded in the FYDP	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			16.507	1.154		1.268		1.292		-		1.292	-	-	-
			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			175.806	25.640		17.880		15.473		-		15.473	-	-	-

Remarks

1) Program acquisition milestones (minus unique Initial Operating Capability) and production milestones are joint program milestones for both Army and Navy.

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy

Date: May 2017

Appropriation/Budget Activity

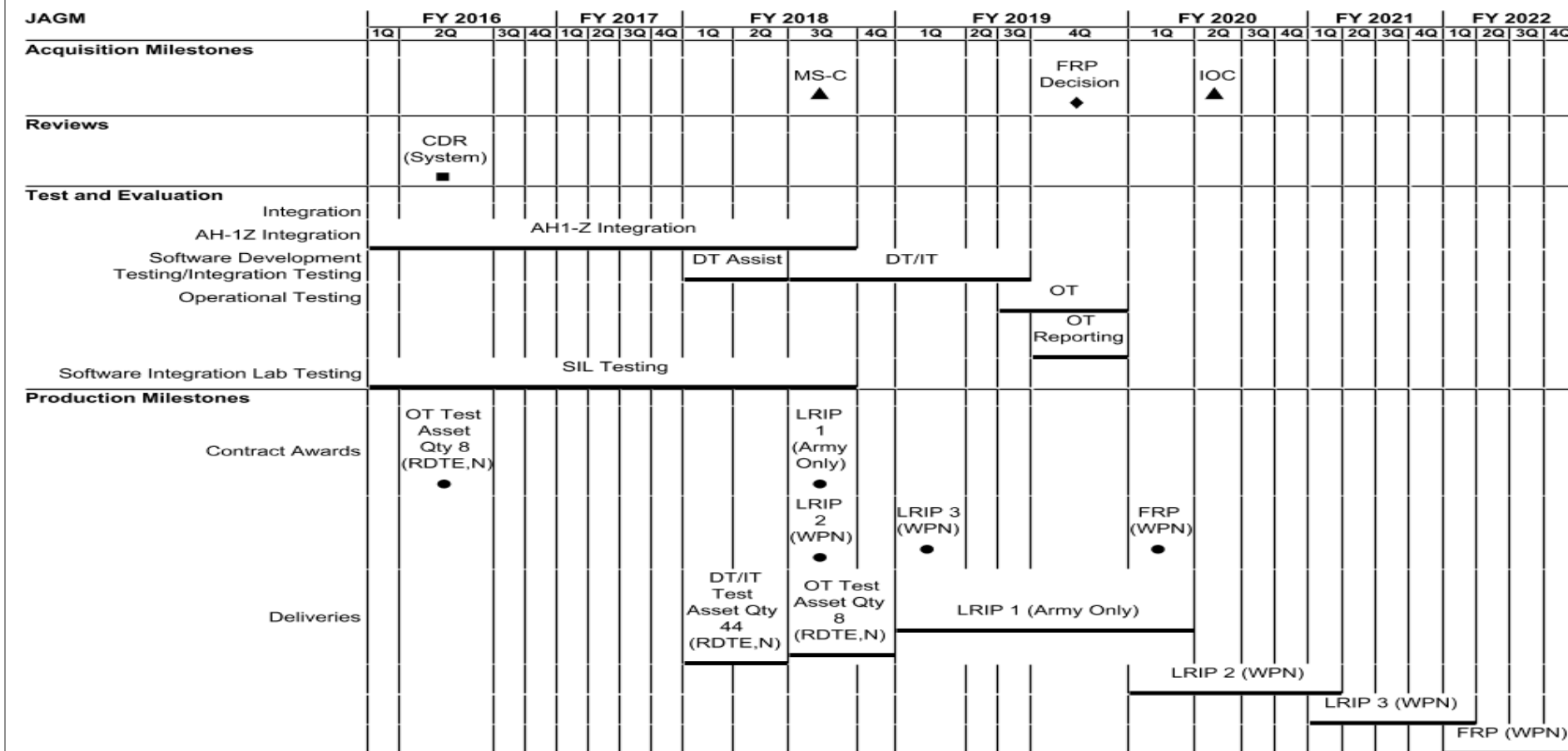
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R-1 Program Element (Number/Name)

PE 0605450N / Joint Air-to-ground Missile (JAGM)

Project (Number/Name)

2211 / Joint Air-to-Ground Missile



2018PB - 0605450N - 2211

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605450N / Joint Air-to-ground Missile (JAGM)	Project (Number/Name) 2211 / Joint Air-to-Ground Missile	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
JAGM				
Acquisition Milestones: Milestone C	3	2018	3	2018
Acquisition Milestones: IOC	2	2020	2	2020
Acquisition Milestones: FRP Decision	4	2019	4	2019
Reviews: CDR (System)	2	2016	2	2016
Test and Evaluation: AH-1Z Integration: AH-1Z Integration	1	2016	3	2018
Test and Evaluation: Software Development Testing/Integration Testing: DT Assist	1	2018	2	2018
Test and Evaluation: Software Development Testing/Integration Testing: DT/IT	3	2018	3	2019
Test and Evaluation: Operational Testing: OT	3	2019	4	2019
Test and Evaluation: Operational Testing: OT Reporting	4	2019	4	2019
Test and Evaluation: Software Integration Lab Testing: SIL Testing	1	2016	3	2018
Production Milestones: Contract Awards: OT Test Asset	2	2016	2	2016
Production Milestones: Contract Awards: LRIP 1 (Army Only)	3	2018	3	2018
Production Milestones: Contract Awards: LRIP 2 (WPN)	3	2018	3	2018
Production Milestones: Contract Awards: LRIP 3 (WPN)	1	2019	1	2019
Production Milestones: Contract Awards: FRP (WPN)	1	2020	1	2020
Production Milestones: Deliveries: DT/IT Test Asset	1	2018	2	2018
Production Milestones: Deliveries: OT Test Asset	3	2018	4	2018
Production Milestones: Deliveries: LRIP 1 (Army Only)	1	2019	1	2020
Production Milestones: Deliveries: LRIP 2 (WPN)	1	2020	1	2021
Production Milestones: Deliveries: LRIP 3 (WPN)	1	2021	1	2022
Production Milestones: Deliveries: FRP (WPN)	1	2022	4	2022