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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>
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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	277.567	86.989	112.846	104.448	-	104.448	81.359	64.899	47.541	48.569	Continuing	Continuing
1663: <i>SDB II F-18 Integration</i>	53.016	45.356	50.546	31.875	-	31.875	7.812	5.985	3.132	3.209	Continuing	Continuing
3072: <i>Small Diameter Bomb (SDB)</i>	182.397	34.434	57.637	72.573	-	72.573	73.547	58.914	44.409	45.360	Continuing	Continuing
3082: <i>JMM BRU</i>	42.154	7.199	4.663	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	54.016

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 439

A. Mission Description and Budget Item Justification

Small Diameter Bomb Increment II (SDB II) is an ACAT 1C joint Department of the Air Force (USAF) and Department of the Navy (DON), with the USAF as the lead service. SDB II provides the warfighter with the capability to attack mobile targets in all-weather from Stand-Off range. SDB II addresses the following warfighter requirements: attack mobile targets, adverse weather operations, multiple kills per pass, multiple ordnance carriage, precision munitions capability, capability against fixed targets, reduced munitions footprint, increased weapons effectiveness, minimized potential for collateral damage, reduced susceptibility of munitions to countermeasures, and provides a net-centric operations capability. The threshold aircraft for the USAF is the F-15E and for the DON are the F-35B and F-35C.

The DON has adjusted the platform integration strategy through the inclusion of F/A-18 E/F using BRU-55 to deliver the capability to the warfighter aligned to adjusted F-35 program's schedule.

JMM BRU contract with Raytheon Intelligence Information Systems (RIIS, formerly RTSC) was terminated for convenience 19 October 2017. FY 2018 funds remain in PU 3082 to pay contract termination costs. FY 2019 and beyond funding was transferred from PU 3082 to PU 3072 to pay for mods to the current BRU-61 to meet Navy and Marine Corps environments.

BUDGET ACTIVITY JUSTIFICATION: 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.

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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>
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B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	97.622	112.846	110.575	-	110.575
Current President's Budget	86.989	112.846	104.448	-	104.448
Total Adjustments	-10.633	0.000	-6.127	-	-6.127
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.000	0.000			
• SBIR/STTR Transfer	-2.633	0.000			
• Rate/Misc Adjustments	0.000	0.000	-6.127	-	-6.127
• Congressional Directed Reductions Adjustments	-6.000	-	-	-	-

Change Summary Explanation

The FY 2019 funding request was reduced by \$4.800 million to account for the availability of prior year execution balances.

The remainder of the FY 2019 rate/miscellaneous adjustments were for purchase price inflation and other rate changes for the programs.

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 1663 / <i>SDB II F-18 Integration</i>
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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
1663: <i>SDB II F-18 Integration</i>	53.016	45.356	50.546	31.875	-	31.875	7.812	5.985	3.132	3.209	Continuing	Continuing
Quantity of RDT&E Articles	29	24	40	18	-	18	-	-	-	-		

A. Mission Description and Budget Item Justification

Due to continuing delays in the F-35 program, the DON has adjusted the platform integration strategy by inclusion of Small Diameter Bomb II (SDB II) and BRU-55 on F/A-18 E/F to deliver the capability to the warfighter in light of continued F-35 program delays. This program funds the aircraft software, integration, and testing required to successfully integrate SDB II and BRU-55 on the F/A-18 E/F to meet a FY 2020 Initial Operational Capability (IOC).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: F/A-18 Integration	45.356	50.546	31.875	0.000	31.875
Articles:	24	40	18	-	18
FY 2018 Plans: Complete ground testing, continue Development Test (DT) efforts, and complete OFP software coding, including UAI. Contract with SDB Prime contractor for 30 SDB Guided Test Vehicles (GTVs), and 10 SDB Captive Carriage Reliability Test (CCRTs) for flight testing.					
FY 2019 Base Plans: Complete DT efforts for both weapon system and aircraft OFP. Contract with SDB Prime contractor for 15 SDB JTVs and 3 All Up Rounds (AUR) to support Operational Test which will begin in FY20.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: The decrease from FY 2018 to FY 2019 reflects the completion of the F-18 Operational Flight Plan (OFP) software coding. Developmental Testing will continue in FY 2019.					
Accomplishments/Planned Programs Subtotals	45.356	50.546	31.875	0.000	31.875

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

N/A

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 1663 / <i>SDB II F-18 Integration</i>

D. Acquisition Strategy

Integration of SDB II and the BRU-55 is software driven by ground and flight test requirements.

E. Performance Metrics

Earned value will be used for the contracted efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 1663 / <i>SDB II F-18 Integration</i>
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Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OFP Development and Support	SS/IDIQ	Boeing : St. Louis, MO	19.334	18.900	Nov 2016	13.569	Jan 2018	6.901	Nov 2018	-		6.901	1.619	60.323	60.323
SDB II Prime Contractor Support	SS/IDIQ	Raytheon Missile Systems : Tuscon, AZ	6.607	11.922	Aug 2017	18.404	May 2018	7.624	Feb 2019	-		7.624	15.435	59.992	59.992
JMM BRU Prime Contractor Support	SS/IDIQ	Raytheon Intelligence Information Systems, Inc. : Indianapolis, IN	6.665	2.000	May 2017	0.000	May 2018	0.000		-		0.000	0.000	8.665	8.665
SDB II Integration Support	WR	NAWC AD : Patuxent River, MD	4.200	2.817	Nov 2016	2.855	Nov 2017	2.023	Nov 2018	-		2.023	Continuing	Continuing	Continuing
SDB II Software Support	WR	NAWC WD : China Lake, CA	4.724	7.717	Nov 2016	2.844	Nov 2017	2.266	Nov 2018	-		2.266	Continuing	Continuing	Continuing
Subtotal			41.530	43.356		37.672		18.814		-		18.814	Continuing	Continuing	N/A

Remarks
 Funding for Boeing includes software coding of Operational Flight Program Build, to include Universal Armament Interface (UAI) and F/A-18 E/F aircraft support required to meet the FY 2020 Initial Operating Capability (IOC).
 Funding for SDB II (Raytheon Missile Systems) Prime Contractor includes support of Super Hornet Integration efforts.
 Contract with Raytheon Intelligence Information Systems (RIIS) terminated for convenience 19 October 2017.

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Wind Tunnel Test	MIPR	AEDC : Arnold AFB, TN	6.200	0.000		0.000		0.000		-		0.000	0.000	6.200	-
Wind Tunnel Test	MIPR	NASA Ames : Moffett Field, CA	0.878	0.000		0.000		0.000		-		0.000	0.000	0.878	-
Development Test	WR	VX-23 : Patuxent River, MD	4.408	2.000	Jan 2017	12.874	Jan 2018	6.597	Nov 2018	-		6.597	4.903	30.782	-

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>F/A-18 E/F SDB II Integration</i>				
Acquisition Milestones: IOC	4	2020	4	2020
Systems Development: OFP Development and Integration	1	2017	3	2018
Test & Evaluation: Test Article Deliveries	3	2017	1	2020
Test & Evaluation: Developmental Test	3	2018	3	2019
Test & Evaluation: Operational Test	1	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3072 / <i>Small Diameter Bomb (SDB)</i>
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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
3072: <i>Small Diameter Bomb (SDB)</i>	182.397	34.434	57.637	72.573	-	72.573	73.547	58.914	44.409	45.360	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 439

A. Mission Description and Budget Item Justification

SDB II is an ACAT IC program providing the warfighter a capability to attack mobile targets in all weather from Stand-Off range. The Air Force is the lead service. Raytheon in Tucson, AZ is the prime contractor. SDB II addresses the following warfighter requirements: attack mobile targets, multiple kills per pass, multiple ordnance carriage, all weather operations, near-precision munitions capability, capability against fixed targets, reduced munitions footprint, increased weapons effectiveness, minimized potential for collateral damage, reduced susceptibility of munitions to countermeasures, and a migration path to net centric ops capability.

This Project Unit includes all funding for DoN support on the DoN threshold platforms, F-35B and F-35C. The USMC requirement to field SDB II on F-35B is in F-35 Operational Flight Plan (OFP) Block 4.1. The F-35C is being conducted as part of Block 4.2. Commencing FY 2019, the F-35 integration will be using BRU-61 vice BRU-77 to carry the SDB II.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: SDB II Weapon Support	9.064	25.948	35.157	0.000	35.157
Articles:	-	-	-	-	-
Description: Funding provides for SDB II Engineering Manufacturing and Development (EMD) efforts including weapon vendor support (Raytheon Missile Systems - RMS), test assets, and government support. Test articles were procured in prior years as part of a joint buy with the Air Force for a better priced quantity buy.					
FY 2018 Plans: Continue support of EMD and integration of SDB II with F-35B and F-35C.					
FY 2019 Base Plans: Begin Flight Sciences and Flight Test support and analysis for Development Test (DT). Testing includes, ejection tests, environmental & loads analysis and release envelope clearance. Funds formerly in PU 3082 to support the JMM BRU (BRU-77) program have been transferred to PU 3072 to support the integration of BRU-61 which is required to carry SDB II on Navy and Marine Corps aircraft.					
FY 2019 OCO Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3072 / <i>Small Diameter Bomb (SDB)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: Increase from FY 2018 to FY 2019 is to support the beginning of Development Test (DT).					
Title: JSF Integration	25.370	31.689	37.416	0.000	37.416
Articles:	-	-	-	-	-
Description: Funding provided for integration of SDB II on F-35B and F-35C, specifically for Lockheed Martin to develop F-35 Operational Flight Program (OFP) software, flight missions, and support and analysis of missions.					
FY 2018 Plans: Increase in the UAI contract to complete the final software testing of UAI into the JSF Operational Flight Program (OFP) and integration of SIL final validation of software functionality. Increase in Block 4 software to merge UAI software into baseline Block 4 software and modify as necessary. Begin participation in Block 4 Flight Sciences which conducts aircraft environment test, Ground Vibration, and Jettison testing to prove the weapon can safely separate from the aircraft without damaging the aircraft and establishes weapon carriage and release envelopes. Implement Bay Modifications to test aircraft in support of flight sciences and test.					
FY 2019 Base Plans: Conduct F-35 OFP Block 4 Flight Sciences which conducts aircraft environment test, Ground Vibration, and Jettison testing to prove the weapon can safely separate from the aircraft without damaging the aircraft and establishes weapon carriage and release envelopes. Begin DT flights.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: Increase from FY 2018 to FY 2019 is to support the beginning of Development Test (DT).					
Accomplishments/Planned Programs Subtotals	34.434	57.637	72.573	0.000	72.573

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
• RDTE,AF/0604329F: <i>Small Diameter Bomb</i>	37.603	38.979	73,709.000	-	73,709.000	31.477	17.442	27.626	28.124	0.000	74,947.647

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

Line Item	FY 2017	FY 2018	FY 2019	FY 2019	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Cost To	
			Base	OCO	Total					Complete	Total Cost
• MPAF/0207327F: <i>Small Diameter Bomb</i>	92.361	82.705	72.506	-	72.506	143.935	336.512	310.233	324.740	0.000	1,362.992
• WPN/BLI2238: <i>Small Diameter Bomb II</i>	0.000	20.968	91.272	-	91.272	118.461	114.754	117.019	119.502	0.000	581.976
• APN/BLI0720: <i>War Consumables</i>	0.000	0.000	9.000	-	9.000	17.247	17.381	17.726	17.820	Continuing	Continuing

Remarks

SDB II Lots 1-3 are USAF only procurements. The DON procurements begin with Lot 4 in FY 2018.

D. Acquisition Strategy

The SDB II acquisition strategy was to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering EMD. This competition began April 17, 2006 with the signature of contracts to the competing contractors: 1) Raytheon and 2) the team of Boeing and Lockheed Martin. A Fixed Price Incentive Firm Target type contract for EMD, including Firm Fixed Price procurement options for Lots 1-3 was awarded to Raytheon August 9, 2010. Lots 4 & 5 are included in the contract, but are Not-To-Exceed options. Milestone C was approved 4 June 2015, with Lot 1 (Air Force only) awarded 12 June 2015.

The Navy funding will support Navy-unique efforts for SDB Increment II, such as aircraft integration, ship suitability, studies and analysis, and program management and government in-house support. These efforts will be performed on several cost-type contracts or through cost reimbursable work requests to government activities and contractors.

E. Performance Metrics

Earned value management has been implemented on the EMD contract with Raytheon.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3072 / <i>Small Diameter Bomb (SDB)</i>
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Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Primary Hardware Development - SDB II EMD	C/FPIF	Raytheon : Tucson, AZ	35.485	2.629	Mar 2017	20.408	Mar 2018	20.147	Mar 2019	-		20.147	65.861	144.530	144.530
Aircraft Integration - JSF	C/CPFF	Lockheed Martin : Fort Worth, TX	31.076	5.749	Jan 2017	4.104	Mar 2018	0.163	Mar 2019	-		0.163	0.163	41.255	41.255
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	11.238	0.000		0.000		0.000		-		0.000	0.000	11.238	-
Hardware Development - BRU-61	C/CPFF	Boeing : St. Charles, MO	4.259	0.000		0.000		5.000	Mar 2019	-		5.000	9.000	18.259	18.259
Subtotal			82.058	8.378		24.512		25.310		-		25.310	75.024	215.282	N/A

Remarks

Primary Hardware Development to Raytheon in Tucson, AZ reflects the SDB II prime contractor and includes test assets and contractor costs to support F-35 integration. Funding increase in FY 2019 is for assets and engineering efforts to support Raytheon participation in F-35 flight sciences.

Funding for Lockheed Martin F-35 includes Associate Contractor Agreements (ACA), bay modifications, logistics efforts, and adapter hardware. It does not include OFP, UAI software coding, nor test missions which are represented in Support and Test sections, respectively.

Funding to Boeing for BRU-61 modifications required to carry SDB II on Navy and Marine Corps aircraft. Prior year efforts were to provide data and support to the BRU-77 contractor. The BRU-77 contract was terminated for convenience 19 Oct 2017.

Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Development - JSF	C/CPFF	Lockheed Martin : Ft. Worth, TX	15.534	14.991	Jan 2017	24.169	Jan 2018	18.514	Jan 2019	-		18.514	17.596	90.804	90.804
Prior year Support cost no longer funded in the FYDP	Various	Various : Various	17.410	0.000		0.000		0.000		-		0.000	0.000	17.410	-
Subtotal			32.944	14.991		24.169		18.514		-		18.514	17.596	108.214	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3072 / <i>Small Diameter Bomb (SDB)</i>
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Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
 Studies and Analyses include Navy activities to define Concept of Operations (CONOPS) and better define Navy-specific and interoperability requirements, such as weapon data link advanced concept technology demonstration, seeker trade studies, and data link trade studies. Prior year Software Development efforts are in support of JSuW Joint Capability Technology Demonstrations incorporation of J.11 Message Set into Strike Weapons and Weapon Data Link Network efforts.

 Software Development for F-35 is the UAI, OFP, and mission planning which supports the SDB II program.

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation	Various	Various : Various	2.864	1.853	May 2017	0.000		7.842	Nov 2018	-		7.842	26.873	39.432	-
Operational Test & Evaluation - SDBII	WR	COMOPTEVFOR : China Lake, CA	1.010	0.000		0.000		0.000		-		0.000	23.959	24.969	-
Developmental Test & Evaluation - SDB II	C/CPFF	Lockheed Martin : Ft. Worth, TX	0.000	0.000		3.416	Mar 2018	14.739	Mar 2019	-		14.739	7.853	26.008	26.008
Prior Year T&E cost no longer funded in the FYDP	Various	Various : Various	8.049	0.000		0.000		0.000		-		0.000	0.000	8.049	-
Subtotal			11.923	1.853		3.416		22.581		-		22.581	58.685	98.458	N/A

Remarks
 Developmental Test (DT) and Operational Test (OT) include all aspects of the weapon system - SDB II, BRU-61, and F-35B and F-35C aircraft OFP.

 Developmental Test squadrons and locations for F-35B and F-35C are still uncertain as squadrons are being established.

 Operational test is scheduled to begin in FY 2021 to support FY 2022 IOC.

Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Services	Various	Various : Various	3.220	0.657	Nov 2016	0.556	Nov 2017	0.691	Nov 2018	-		0.691	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy **Date:** February 2018

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Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Support	WR	NAWC WD : China Lake, CA	29.262	4.400	Nov 2016	2.702	Nov 2017	2.422	Nov 2018	-		2.422	Continuing	Continuing	Continuing
Government Support	WR	Various : Various	9.668	2.325	Nov 2016	0.600	Nov 2017	0.750	Nov 2018	-		0.750	Continuing	Continuing	Continuing
Program Management Support	WR	Various : Various	11.141	1.750	Nov 2016	1.532	Nov 2017	2.225	Nov 2018	-		2.225	Continuing	Continuing	Continuing
Travel	WR	NAVAIR : Patuxent River, MD	2.181	0.080	Oct 2016	0.150	Oct 2017	0.080	Oct 2018	-		0.080	0.750	3.241	-
Subtotal			55.472	9.212		5.540		6.168		-		6.168	Continuing	Continuing	N/A

Remarks
Increase in FY 2019 for government support provides support for Development Test.

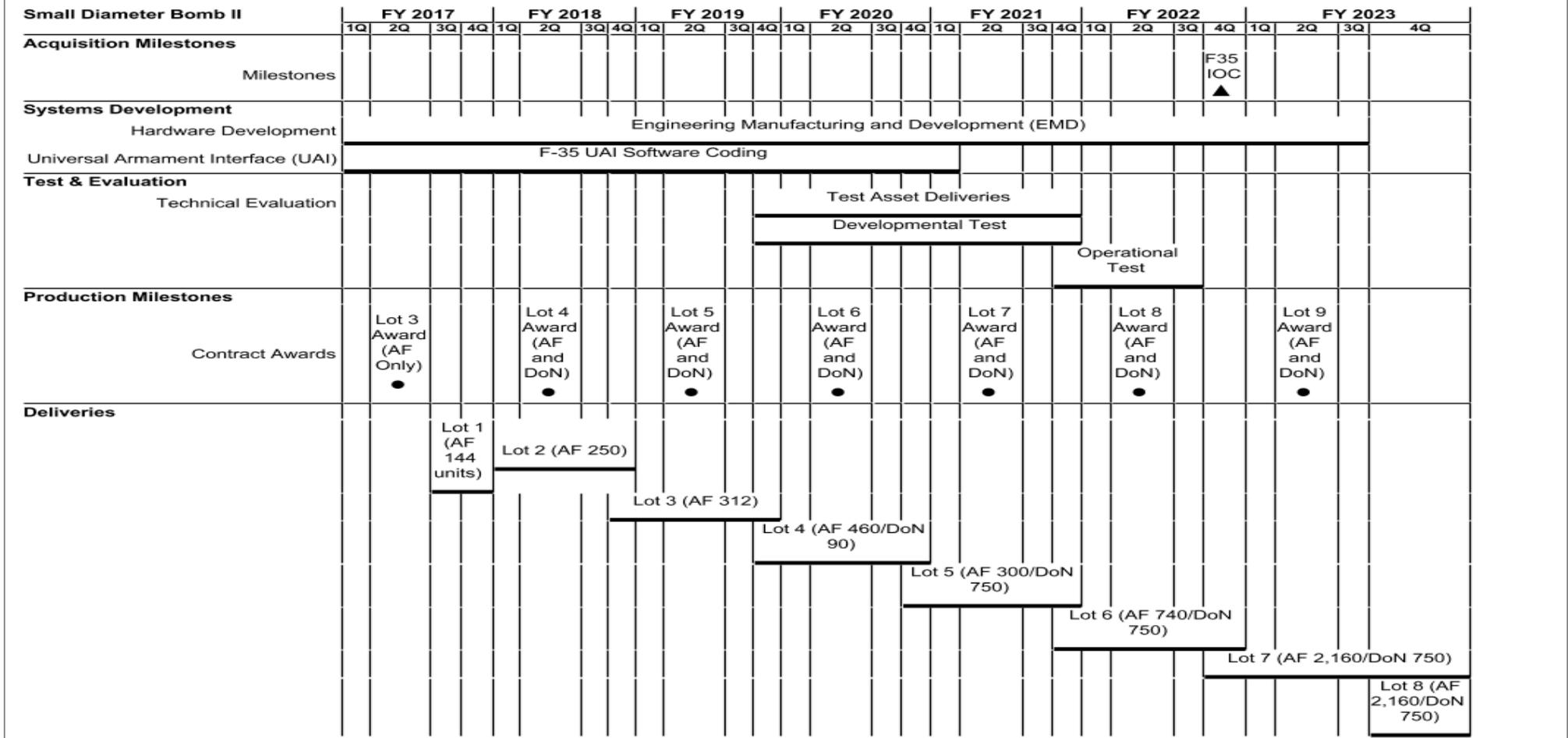
	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	182.397	34.434	57.637	72.573	-	72.573	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3072 / <i>Small Diameter Bomb (SDB)</i>
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2019DON - 0604329N - 3072

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3072 / <i>Small Diameter Bomb (SDB)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Small Diameter Bomb II</i>				
Acquisition Milestones: Milestones: F-35 IOC	4	2022	4	2022
Systems Development: Hardware Development: Engineering Manufacturing and Development (EMD)	1	2017	3	2023
Systems Development: Universal Armament Interface (UAI): F-35 OFP Software Coding	1	2017	1	2021
Test & Evaluation: Technical Evaluation: Test Asset Deliveries	4	2019	4	2021
Test & Evaluation: Technical Evaluation: Developmental Test	4	2019	4	2021
Test & Evaluation: Technical Evaluation: Operational Test	4	2021	3	2022
Production Milestones: Contract Awards: Lot 3 Award (AF Only)	2	2017	2	2017
Production Milestones: Contract Awards: Lot 4 Award (AF and DoN)	2	2018	2	2018
Production Milestones: Contract Awards: Lot 5 Award (AF and DoN)	2	2019	2	2019
Production Milestones: Contract Awards: Lot 6 Award (AF and DoN)	2	2020	2	2020
Production Milestones: Contract Awards: Lot 7 Award (AF and DoN)	2	2021	2	2021
Production Milestones: Contract Awards: Lot 8 Award (AF and DoN)	2	2022	2	2022
Production Milestones: Contract Awards: Lot 9 Award (AF and DoN)	2	2023	2	2023
Deliveries: Lot 1 Delivery (AF only 144 units)	3	2017	4	2017
Deliveries: Lot 2 Del (AF only 250 units)	1	2018	4	2018
Deliveries: Lot 3 Del (AF only 312 units)	4	2018	4	2019
Deliveries: Lot 4 Del (AF 460; DoN 90 units)	4	2019	4	2020
Deliveries: Lot 5 Del (AF 300; DoN 750 units)	4	2020	4	2021
Deliveries: Lot 6 Del (AF 740; DoN 750 units)	4	2021	4	2022
Deliveries: Lot 7 Del (AF 2,160; DoN 750 units)	4	2022	4	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3072 / <i>Small Diameter Bomb (SDB)</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: Lot 8 Del (AF 2,160; DoN 750 units)	4	2023	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3082 / <i>JMM BRU</i>
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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
3082: <i>JMM BRU</i>	42.154	7.199	4.663	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	54.016
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Miniature Munitions Bomb Rack Unit (JMM BRU) is an Air Force (AF) led ACAT III program. It is required for the Department of the Navy's (DON) carriage of the SDB II weapon in the internal bay of the F-35B and F-35C and operation in the DON environment. The SDB II Capability Development Document (CDD) states that SDB II must be operable on the Miniature Munitions Smart Rack BRU-61/A. The BRU-61/A, currently in sustainment for the AF, does not meet the needs to operate with SDB II within the F-35 internal bay in the DON environment. The JMM BRU (BRU-77) fills the capability gap required by the DON. Efforts include development of a dual power capability to meet the SDB II operating environment on the F-35. The USMC requirement to field SDB II on F-35B is in F-35 Operational Flight Plan (OFP) Block 4.1. The F-35C is being conducted as part of Block 4.2.

The BRU-77 contract was terminated for convenience 19 Oct 2017. FY 2018 funding remains for termination costs. The requirement will now be supported by BRU-61 budgeted within PU 3072.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Joint Miniature Munitions Bomb Rack Unit (JMM BRU) Government Support	1.718	2.214	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Funding provided for the SDB II Carriage System support and integration into Navy environments.					
FY 2018 Plans: Contract with Raytheon was terminated 19 Oct 2017. Funds remain for contract termination costs.					
FY 2019 Base Plans: Contract with Raytheon was terminated 19 Oct 2017. Funds moved to PU 3072 to support BRU-61 mods required to carry SDB II on F-35.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: Contract with Raytheon was terminated 19 Oct 2017. FY 2019 funding was realigned to PU 3072 to support BRU-61 mods required to carry SDB II on F-35.					
Title: Joint Miniature Munitions Bomb Rack (JMM BRU) Prime Contractor	5.481	2.449	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3082 / <i>JMM BRU</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p align="right"><i>Articles:</i></p> <p>Description: Prime Contractor Support of JMM BRU (BRU-77) TD/EMD contract.</p> <p>FY 2018 Plans: Contract with Raytheon was terminated 19 Oct 2017. Funds remain for contract termination costs.</p> <p>FY 2019 Base Plans: Contract with Raytheon was terminated 19 Oct 2017. Funds moved to PU 3072 to support BRU-61 mods required to carry SDB II on F-35.</p> <p>FY 2019 OCO Plans: N/A</p> <p>FY 2018 to FY 2019 Increase/Decrease Statement: Contract with Raytheon was terminated 19 Oct 2017. FY 2019 funds were realigned to PU 3072 to support BRU-61 mods required to carry SDB II on F-35.</p>	-	-	-	-	-
Accomplishments/Planned Programs Subtotals	7.199	4.663	0.000	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

The JMM BRU is an Air Force led ACAT III program. Competitive source selection conducted with Technology Development contract award 3QFY 2013. Milestone B was completed and Engineering, Manufacturing, and Development (EMD) contract awarded 4QFY 2015.

The BRU-77 contract was terminated for convenience 19 Oct 2017.

E. Performance Metrics

Earned value management is being implemented on the TD/EMD contract.

The BRU-77 contract was terminated for convenience 19 Oct 2017.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3082 / <i>JMM BRU</i>
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Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Joint Miniature Munitions Bomb Rack Unit (JMM BRU)	C/FPIF	Raytheon Technical Services Company LLC : Indianapolis, IN	20.765	5.480	Mar 2017	4.663	Mar 2018	0.000	Mar 2019	-		0.000	0.000	30.908	30.908
Subtotal			20.765	5.480		4.663		0.000		-		0.000	0.000	30.908	N/A

Remarks
JMM BRU contract with Raytheon Intelligence Information Systems (RIIS, formerly RTSC) was terminated for convenience 19 October 2017. FY 2018 funding remains for contract termination costs.

Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CAATS	Various	NAWC AD : Lakehurst	2.100	0.417	Feb 2017	0.000	Feb 2018	0.000	Feb 2019	-		0.000	0.000	2.517	-
Subtotal			2.100	0.417		0.000		0.000		-		0.000	0.000	2.517	N/A

Remarks
JMM BRU contract with Raytheon Intelligence Information Systems (RIIS, formerly RTSC) was terminated for convenience 19 October 2017. FY 2018 funding remains for contract termination costs.

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test	Various	Various : Various	0.000	0.000	Mar 2017	0.000	Mar 2018	0.000	Mar 2019	-		0.000	0.000	0.000	-
Subtotal			0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	N/A

Remarks
JMM BRU contract with Raytheon Intelligence Information Systems (RIIS, formerly RTSC) was terminated for convenience 19 October 2017. FY 2018 funding remains for contract termination costs.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3082 / <i>JMM BRU</i>
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Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Support	WR	NAWC WD : China Lake, CA	11.467	0.890	Nov 2016	0.000	Nov 2017	0.000	Nov 2018	-		0.000	0.000	12.357	-
Government Support	WR	Various : Various	6.945	0.412	Nov 2016	0.000	Nov 2017	0.000	Nov 2018	-		0.000	0.000	7.357	-
Contractor Services	MIPR	AFLCMC : Eglin AFB, FL	0.506	0.000		0.000		0.000		-		0.000	0.000	0.506	-
Travel	MIPR	ASC20OG : Eglin AFB, FL	0.371	0.000	Oct 2016	0.000	Oct 2017	0.000		-		0.000	0.000	0.371	-
Subtotal			19.289	1.302		0.000		0.000		-		0.000	0.000	20.591	N/A

Remarks
JMM BRU contract with Raytheon Intelligence Information Systems (RIIS, formerly RTSC) was terminated for convenience 19 October 2017. FY 2018 funding remains for contract termination costs.

	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	42.154	7.199	4.663	0.000	-	0.000	0.000	54.016	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy **Date:** February 2018

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3082 / <i>JMM BRU</i>
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Joint Miniature Munitions Bomb Rack Unit (JMM BRU)	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones																												
Systems Development																												
Hardware Development	Engineering Manufacturing and Development (EMD)																											
Reviews		Critical Design Review (CDR) ■			Termination ■																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / <i>Small Diameter Bomb (SDB)</i>	Project (Number/Name) 3082 / <i>JMM BRU</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Joint Miniature Munitions Bomb Rack Unit (JMM BRU)</i>				
Systems Development: Hardware Development: Engineering Manufacturing and Development (EMD)	1	2017	1	2018
Systems Development: Reviews: Critical Design Review (CDR)	3	2017	3	2017
Systems Development: Reviews: Contract Termination for Convenience	1	2018	1	2018