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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2017 Navy **Date:** February 2016

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	119.194	9.820	32.172	40.350	-	40.350	46.349	32.347	32.729	33.394	104.296	450.651
0981: AMRAAM	119.194	9.820	32.172	40.350	-	40.350	46.349	32.347	32.729	33.394	104.296	450.651

**Program MDAP/MAIS Code:** 185

**A. Mission Description and Budget Item Justification**

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	10.210	32.172	44.094	-	44.094
Current President's Budget	9.820	32.172	40.350	-	40.350
Total Adjustments	-0.390	0.000	-3.744	-	-3.744
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.193	0.000			
• SBIR/STTR Transfer	-0.197	0.000			
• Rate/Misc Adjustments	0.000	0.000	-3.744	-	-3.744

**Change Summary Explanation**

Decrease in AMRAAM by \$1.710M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

The FY 2017 funding request was reduced by \$0.732 million to account for the availability of prior year execution balances.

FY17 includes funding for improved missile performance at longer range, increased survivability, improved lethality, and continues Advanced AIM-120C7 & AIM-120D Electronic Protection Improvement Program efforts through software development, simulation and test efforts.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Navy										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 1319 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM				<b>Project (Number/Name)</b> 0981 / AMRAAM			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
0981: AMRAAM	119.194	9.820	32.172	40.350	-	40.350	46.349	32.347	32.729	33.394	104.296	450.651
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks. Funding in FY15 through FY21 supports Navy unique Test & Evaluation for Navy fielding of the AIM-120C7 and AIM-120D Electronic Protection Improvement Program (EPIP) capability.

The Cost To Complete should be \$104.057M.  
The Total Cost should be \$452.278M.

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

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<b>Title:</b> Test and Evaluation	7.599	4.867	5.485	0.000	5.485
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Test and Evaluation (T&E) and associated governmental support required to ensure AIM-120 missile integration with threshold US Navy aircraft platforms (F/A-18 C/D/E/F and Joint Strike Fighter).					
<b>FY 2015 Accomplishments:</b> Completed AIM-120D Operational Test (OT) and certified the AIM-120D for use on Navy F/A-18 E/F. Achieved Initial Operation Capability (IOC) and Fleet Release of the AIM-120D. Provided necessary test equipment and supported AIM-120D OT on the F/A-18 A/C/D. Completed certification on the F/A-18 A/C/D. Conducted Test Readiness Board and successfully executed captive carry developmental test (DT) flights for System Improvement Program (SIP). Supplied support and test resources for a successful missile shot of SIP-1 AIM-120D which incorporated improvements identified in the baseline OT Report. Completed fielding efforts and required testing of EPIP Basic C-7. Supported ongoing EPIP C3/4/5/6 OT&E test events for future fielding.					
<b>FY 2016 Plans:</b> Complete AIM-120C7 EPIP Advanced Tape 1 DT, complete a DT/OT transition report and the AIM-120C7 EPIP Advanced Tape 1 Operational Test Readiness Review (OTRR). Field the AIM-120C3 through 6 EPIP Basic capability. Continue building test infrastructure to support SIP-1 test events and large force exercises. Provide					

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<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
test resources and test assets for EPIP Advanced Tape 2 DT. Complete AIM-120D SIP-1 IT/OT test events, supply inputs to the OT test report and generate the fielding decision for SIP-1 on F/A-18 aircraft.  <b>FY 2017 Base Plans:</b> Continue to provide test asset and support for AIM-120D SIP-2, AIM-120C7 EPIP Advanced Tape 1 and 2 activities. Provide test and evaluation inputs to the EPIP Advanced Tape 2 and SIP-2 designs and support the respective Critical Design Reviews. Provide necessary documentation and provide test results for SIP-2 DT and EPIP Advanced Tape 2 test events. Conduct OTRR for SIP-2 and EPIP Advanced Tape 2. Certify and field EPIP Advanced Tape 1 on F/A-18.  <b>FY 2017 OCO Plans:</b> N/A					
<b>Title:</b> Identify potential improvements  <b>Articles:</b>  <b>Description:</b> Engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.  <b>FY 2015 Accomplishments:</b> Continued engineering support of AMRAAM, to include investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.  <b>FY 2016 Plans:</b> Continue engineering support of AMRAAM, to include investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.  <b>FY 2017 Base Plans:</b> Continue engineering support of AMRAAM, to include investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.  <b>FY 2017 OCO Plans:</b> N/A	0.171 -	0.223 -	0.227 -	0.000 -	0.227 -
<b>Title:</b> System Improvement Program (SIP) Efforts  <b>Articles:</b>  <b>Description:</b> Continuation of System Improvement Program (SIP)/Technical Maturity and Risk Reduction (TMRR) efforts for the AMRAAM weapon system. These include systems engineering, program management,	2.050 -	27.082 -	34.638 -	0.000 -	34.638 -

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<p>missile software and/or hardware upgrades to increase capability, survivability, lethality, as well as aircraft Operational Flight Profile updates on a recurring basis. EPIP Advanced Tape 1 and Tape 2 capability improvements on the C7 missile variant will be incorporated with AIM-120D SIP-2 and 3 software updates.</p> <p><b>FY 2015 Accomplishments:</b> AIM-120D Initial Operational Capability declared 05 Jan 15. Fielded EPIP Basic capabilities in the AIM-120 C7 missile variant (Tape 9 Rev 4). Executed Navy OT events for EPIP Basic C-3 through C6 (Tape 7 Rev 29). Continued AIM-120D SIP-1 design implementation and conducted successful SIP-1 missile firing with an AIM-120D on an F/A-18E aircraft. Completed SIP-1 OTRR. Completed the SIP-2 risk reduction phase and conducted preliminary design reviews for SIP-2 and AIM-120C7 EPIP Advanced Tape 2 programs. Awarded the SIP-2 Engineering and Manufacturing Development (EMD) contract and transitioned to integrated software design. Released the Request for Proposal for SIP-3 TMRR and conducted the Solution Analysis / Candidate Selection Process for planned SIP-3 deficiencies corrections and software candidates to keep pace with the evolving threats.</p> <p><b>FY 2016 Plans:</b> Continue infrastructure investments to support AIM-120D SIP-1, 2, 3 and AIM-120C EPIP activities. Develop an AMRAAM Data Recorder (ADR) to replace the Inflight Data Acquisition Pod (IDAP), which has become unreliable and obsolete, along with additional test equipment to meet SIP-2 and SIP-3 requirements. Complete SIP-1 OT and deploy the first AIM-120D improvement software increment to the Navy AMRAAM inventory. Continue SIP-2 EMD acquisition activities and conduct a critical design review. Award SIP-3 TMRR and begin EMD contracting efforts.</p> <p><b>FY 2017 Base Plans:</b> Complete EPIP Advanced Tape 1 OT events and field in the C7 missile variant. Complete AIM-120C7 EPIP Advanced Tape 2 DT efforts and enter into OT. Continue AIM-120D SIP-2 EMD DT flight testing and conduct Functional Configuration Audit/Test Readiness Board and OTRR. Award SIP-3 EMD contract.</p> <p><b>FY 2017 OCO Plans:</b> N/A</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	9.820	32.172	40.350	0.000	40.350

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<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• WPN/ 2206: AMRAAM	2.165	202.773	204.697	-	204.697	261.825	272.341	268.903	274.092	908.404	4,534.258
• MPAF/3479: AMRAAM	329.600	390.112	360.398	-	360.398	449.153	467.062	477.766	473.336	1,276.899	12,606.711
• RDTE,AF/673777: AMRAAM	82.195	46.160	61.044	-	61.044	61.612	65.733	66.910	68.115	65.000	896.658

**Remarks**

**D. Acquisition Strategy**

AMRAAM production procurements will continue across the FYDP with periodic pre-planned technical design refreshes and Value Engineering Change Proposals. The Air Dominance Division has implemented a multiple year production contract strategy (basic contract with 2 priced options).

AMRAAM's Acquisition Program Baseline (APB) was updated on 28 Oct 2015.

**E. Performance Metrics**

Meeting cost, schedule, performance, funding and life cycle sustainment requirements in accordance with the Acquisition Program Baseline.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM
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<b>Product Development (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Primary Hdw Development (EGLIN)	SS/CPAF	RAYTHEON COMPANY : Tucson AZ	45.066	1.098	Jan 2015	22.519	Jan 2016	29.001	Jan 2017	-		29.001	180.946	278.630	278.630
Award Fees (EGLIN)	SS/CPAF	RAYTHEON COMPANY : Tucson AZ	6.456	0.194	Jan 2015	3.974	Jan 2016	5.123	Jan 2017	-		5.123	31.911	47.658	47.658
Primary Hdw Development (NAWCAD)	WR	NAWCAD : Patuxent River MD	2.457	0.585	Nov 2014	0.422	Nov 2015	0.437	Nov 2016	-		0.437	3.273	7.174	-
Primary Hdw Development (NAWCWD)	WR	NAWCWD : China Lake CA	0.993	0.088	Dec 2014	0.084	Dec 2015	0.000		-		0.000	0.000	1.165	-
Prior Years Dev Cost no longer funded in the FYDP	Various	Various : Various	22.839	0.000		0.000		0.000		-		0.000	0.000	22.839	-
<b>Subtotal</b>			77.811	1.965		26.999		34.561		-		34.561	216.130	357.466	-

**Remarks**  
Remarks: Percentage of award fees actually awarded in past award fee periods is 14.3%.

<b>Support (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Development Support (NSMA)	WR	NAVY SYST MGT ACT : Arlington VA	3.646	0.171	Jan 2015	0.223	Jan 2016	0.227	Jan 2017	-		0.227	1.705	5.972	-
Prior Years Support costs no longer funded in the FYDP	Various	Various : Various	19.295	0.000		0.000		0.000		-		0.000	0.000	19.295	-
<b>Subtotal</b>			22.941	0.171		0.223		0.227		-		0.227	1.705	25.267	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM
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AMRAAM	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021							
	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				
<b>Acquisition Milestones</b>																																
Milestones	AIM-120D IOC F/A18 E/F ▲				AIM-120D IOC F/A18 C/D ▲				EPIP Adv AIM-120C7 IOC Tape 1 ▲				EPIP Adv AIM-120C7 IOC Tape 2 ▲				SIP 2 AIM-120D IOC ▲				SIP 3 AIM-120D IOC ▲											
<b>Systems Development</b>																																
Software Development	System Improvement Program																															
	Electronic Protection Improvement Program																															
<b>Test &amp; Evaluation</b>																																
Operational Evaluation																																
<b>Production Milestones</b>																																
Contract Awards					Lot 28 ●				Lot 30 ●				Lot 31 ●				Lot 32 ●				Lot 33 ●				Lot 34 ●				Lot 35 ●			
<b>Production Deliveries</b>																																
	Lot 25 AUR Qty 68		Lot 26 CATM Qty 50		Lot 26 AUR Qty 17		Lot 27 CATM Qty 67				Lot 28 CATM Qty 54		Lot 28 AUR Qty 7		Lot 30 CATM Qty 41				Lot 30 AUR Qty 138				Lot 31 AUR Qty 163		Lot 32 AUR Qty 247				Lot 33 AUR Qty 260			

2017PB - 0207163N - 0981

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**Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AMRAAM</b>				
Acquisition Milestones: Milestones: SIP 2 AIM-120D IOC	4	2018	4	2018
Acquisition Milestones: Milestones: SIP 3 AIM-120D IOC	4	2020	4	2020
Acquisition Milestones: Milestones: EPIP Advanced AIM-120C7 IOC Tape 1	2	2017	2	2017
Acquisition Milestones: Milestones: EPIP Advanced AIM-120C7 IOC Tape 2	3	2018	3	2018
Acquisition Milestones: Milestones: AIM-120D IOC F/A18 E/F (Threshold)	1	2015	1	2015
Acquisition Milestones: Milestones: AIM-120D IOC F/A18 C/D	4	2015	4	2015
Systems Development: Software Development: System Improvement Program Start (P3I Follow-0n)	1	2015	4	2021
Systems Development: Software Development: Electronic Protection Improvement Program	1	2015	4	2021
Production Milestones: Contract Awards: Production Lot 28 Contract Award	2	2015	2	2015
Production Milestones: Contract Awards: Production Lot 30 Contract Award	2	2016	2	2016
Production Milestones: Contract Awards: Production Lot 31 Contract Award	2	2017	2	2017
Production Milestones: Contract Awards: Production Lot 32 Contract Award	2	2018	2	2018
Production Milestones: Contract Awards: Production Lot 33 Contract Award	2	2019	2	2019
Production Milestones: Contract Awards: Production Lot 34 Contract Award	2	2020	2	2020
Production Milestones: Contract Awards: Production Lot 35 Contract Award	2	2021	2	2021
Production Deliveries: Production Lot 25 AUR Qty 68	1	2015	2	2015
Production Deliveries: Production Lot 26 AUR Qty 17	2	2015	3	2015
Production Deliveries: Production Lot 26 CATM Qty 50	1	2015	1	2015
Production Deliveries: Production Lot 27 CATM Qty 67	2	2015	1	2016
Production Deliveries: Production Lot 28 AUR Qty 7	3	2017	3	2017

**UNCLASSIFIED**

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Deliveries: Production Lot 28 CATM Qty 54	3	2016	1	2017
Production Deliveries: Production Lot 30 CATM Qty 41	4	2017	4	2018
Production Deliveries: Production Lot 30 AUR Qty 138	2	2018	2	2019
Production Deliveries: Production Lot 31 AUR Qty 163	2	2019	2	2020
Production Deliveries: Production Lot 32 AUR Qty 247	2	2020	2	2021
Production Deliveries: Production Lot 33 AUR Qty 260	2	2021	4	2021