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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 0207163F <i>I Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	311.325	68.564	82.195	46.160	-	46.160	55.444	61.612	65.733	66.910	86.000	843.943
673777: <i>AMRAAM</i>	311.325	68.564	82.195	46.160	-	46.160	55.444	61.612	65.733	66.910	86.000	843.943
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Program MDAP/MAIS Code: 185												
<u>A. Mission Description and Budget Item Justification</u> The Air Force and Navy continue to develop improvements to the Advanced Medium Range Air-to-Air Missile (AMRAAM) to counter existing and emerging air vehicle threats operating at high or low altitude, and having advanced Electronic Attack (EA) capabilities. The development program also enables AMRAAM compatibility with advanced fighters, enhances AMRAAM capability and operational flexibility against current and projected threats, incorporates high payoff technology development, performs risk reduction activities, and investigates new variants and/or alternate missions which may use AMRAAM attributes. The latest AMRAAM variant, the AIM-120D, delivers improved performance via Global Positioning System (GPS)-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which improves kinematic performance and weapon effectiveness. The AIM-120D Operational Test Readiness Review was conducted in May 2012. Operational Testing (OT) was completed in July 2014. The aircraft integration program maintains compatibility/performance of the missile with changes occurring on threshold AMRAAM platforms per CPD (Capability Production Document). To keep the existing inventory as effective as possible, the Air Force and Navy also develop, test, and field improvements that are implemented via software upgrades reprogrammed into fielded AMRAAMs, and/or hardware upgrades inserted into production units. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (ACAT IC) program with Air Force as lead service. This program is in Budget Activity 7-Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.												

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B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		70.614	82.195	46.467	-	46.467
Current President's Budget		68.564	82.195	46.160	-	46.160
Total Adjustments		-2.050	-	-0.307	-	-0.307
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-2.050	-			
• Other Adjustments		-	-	-0.307	-	-0.307
Change Summary Explanation No Significant Program Changes						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2014	FY 2015	FY 2016
Title: System Improvement Program (SIP)/Electronic Protection Improvement Program (EPIP)				34.053	44.050	29.662
Description: Provide system improvements/electronic protection improvements						
FY 2014 Accomplishments:						
1. EPIP Basic: Continued Basic EPIP C-7 dedicated OT flight test program. Activities underway to release the tactical software to reprogram fielded missiles. Completed Basic EPIP C-3 thru C-6 IT live fire missions.						
EPIP Advanced: Continued Advanced EPIP implementation effort to address advanced threats in AIM-120C-7 missiles. Continuing advanced EPIP DT captive carry program. In addition, completed upgrades to China Lake Hardware-in-the-Loop (HWIL) facility to support the Advanced EPIP program.						
2. AIM-120D SIP: Continued SIP-1 design implementation and released engineering software to begin captive flight testing of the first 120D improvement software tape. Awarded the contract for SIP-2 risk reduction through Preliminary Design Review (PDR), completed a System Requirement Review, and continued candidate evaluation and preliminary design activities. Continued study of efficient/effective integration of other system improvements resulting from parts obsolescence issues and cost reduction initiatives to keep pace with evolving threats.						
FY 2015 Plans:						

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
1. EPIP Basic: Completes Basic EPIP dedicated OT flight test program for AIM-120C-3 through C-6 configurations and releases software to the field. EPIP Advanced: Continues implementation effort to address advanced threats in AIM-120C-7 missiles. Continues Tape 1 DT captive flight test and begins IT live fire shots. Continues Tape 2 development and DT captive flight test. Tape 2 CDR is conducted. 2. AIM-120D SIP: Continues SIP-1 design implementation and released engineering software to begin captive flight testing of the first AIM-120D improvement software tape. Completes development, Functional Configuration Audit (FCA), Operational Test Readiness Review (OTRR), and operational test of AIM-120D SIP 1 tactical software. Continues SIP-2 risk reduction which will culminate with a Preliminary Design Review (PDR), complete a System Functional Review, and continue candidate evaluation and preliminary design activities. Activities underway to award the Engineering, Manufacturing and Development (EMD) phase of SIP 2. FY 2016 Plans: 1. EPIP Advanced: Completes Tape 1 final IT live-fire shots and then the dedicated OT live-fire shots. Continues Tape 2 development efforts and captive flight test. 2. AIM-120D SIP: Fields SIP 1 tactical software at the completion of a successful OT program. Continues candidate evaluation/selection and preliminary design activities, collects and assesses lab and/or captive flight tests data to evaluate performance and feasibility of potential upgrades. Continues the EMD phase and conducts a Critical Design Review (CDR) for the first SIP 2 increment. Begins the risk reduction activities for SIP 2, Increment 2 design candidates.				
Title: Test and Evaluation Description: Test and evaluation; Provides support to DT/OT FY 2014 Accomplishments: Completed dedicated AIM-120D OT. Accomplished OT Readiness Review (OTRR), certified the missile ready for dedicated OT, and dedicated OT captive carry and free flight on F/A-18E/F and F-15C/D. Continued infrastructure investments to support AIM-120D OT, SIP, and EPIP activities. Completed EPIP Basic C-7 dedicated OT live fire program. Completed Basic EPIP C-3 thru C-6 IT live fire program. Continued Advanced EPIP DT captive carry program. FY 2015 Plans: Completes Basic EPIP dedicated OT flight test program for AIM-120C-3 through C-6 configurations and releases software to the field. Continues Advanced EPIP Tape 1 DT captive flight test and begins IT live fire shots. Continues Advanced EPIP Tape 2		10.618	9.250	6.878

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C. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
development and DT captive flight test. Continues infrastructure investments to support test activities. Continues SIP 1 captive and IT shots, followed by dedicated OT.												
FY 2016 Plans: Completes Advanced EPIP Tape 1 final IT live-fire shots and then the dedicated OT live-fire shots. Continues Advanced EPIP Tape 2 development efforts and captive flight test. Completes AIM-120D SIP 1 OT and begins SIP 2 DT/captive flight testing during EMD. Continues infrastructure investments to support test activities.												
Title: Aircraft Integration										23.893	28.895	9.620
Description: Aircraft Integration - Integrate AIM-120D on multiple aircraft platforms												
FY 2014 Accomplishments: Continued integration and testing of AIM-120D on multiple threshold aircraft platforms.												
FY 2015 Plans: Continues integration and testing of AIM-120D on multiple threshold aircraft platforms.												
FY 2016 Plans: Continues integration and testing of AIM-120D on multiple threshold aircraft platforms.												
Accomplishments/Planned Programs Subtotals										68.564	82.195	46.160
D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• MPAF: BA02: Line Item # MAMRA0: Missile Procurement, Air Force	318.415	329.600	390.112	-	390.112	373.798	451.265	486.862	475.166	1,681.799	12,559.878	
• MPAF: BA04: Line Item # 00099K: Initial Spares/Repair Parts	0.084	2.062	1.996	-	1.996	2.089	2.080	2.060	2.097	-	-	
• WPN: BA02: Line Item # 2206: Weapons Procurement, Navy	82.529	2.165	192.873	-	192.873	207.280	265.491	275.970	272.424	1,454.516	4,809.777	
• RDTE: BA07: Line Item # 0981: RDTE, Navy	2.575	10.210	32.172	-	32.172	44.094	46.007	32.156	32.828	139.573	456.234	
Remarks												

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E. Acquisition Strategy Post-OT missile improvements are underway as part of the AIM-120D upgrade program. The SIP, Increment 1 (SIP-1) continues and is expected to field in early FY16. Additional SIP increments are in the planning phase and will further improve the AIM-120D to meet emerging warfighter requirements. SIP 2 EMD contract award is planned for 3rd Qtr FY15 to incorporate Basic EPIP into AIM-120D, with forecasted fielding in FY18. SIP increment 3 EMD contract award is planned for FY17 with fielding in FY20. The EPIP is also underway to keep AIM-120C missiles capable against the growing electronic attack threat environment. EPIP Basic capability for the C-7 missile will field in early FY15. EPIP Basic capability for the C-3 thru C-6 missiles will field later in FY15. Additional capabilities (EPIP Advanced) are in the development stage with initial fielding projected for FY17 for tape 1 and FY18 for tape 2.		
F. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207163F / Advanced Medium Range Air-to-Air Missile (AMRAAM)				Project (Number/Name) 673777 / AMRAAM					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 Improvement Program (SIP)/Electronic Protection (EP)	SS/CPFF	Raytheon : Tucson, AZ	141.602	33.147	Mar 2014	42.777	Mar 2015	28.381	Mar 2016	-		28.381	193.934	439.841	TBD
F-22 Aircraft Integration	MIPR	Wright-Patterson AFB : Dayton, OH	66.572	20.830	Jan 2014	23.940	Jan 2015	5.820	Jan 2016	-		5.820	-	117.162	TBD
RMS Aircraft Integration	SS/CPFF	Raytheon : Tucson, AZ	0.000	3.063	Jan 2014	4.955	Jan 2015	3.800	Jan 2016	-		3.800	39.500	51.318	TBD
Subtotal			208.174	57.040		71.672		38.001		-		38.001	233.434	608.321	-
Remarks Cost Plus Fixed Fee (CPFF) software development design implementation contracts include incentive events which must be achieved in order to earn full fixed fee amount.															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Government Test	Various	Various : Various,	14.723	1.678	Jan 2014	3.927	Jan 2015	1.136	Jan 2016	-		1.136	46.521	67.985	-
RMS Test	SS/CPFF	Raytheon : Various, AZ	77.917	8.940	Jan 2014	5.323	Jan 2015	5.742	Jan 2016	-		5.742	44.740	142.662	TBD
Subtotal			92.640	10.618		9.250		6.878		-		6.878	91.261	210.647	-
Remarks Various = T&E activities take place at numerous locations across the US. Too many activities and locations to list.															

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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Program Management Administration	Various	Various : Various,	10.511	0.906	Jan 2014	1.273	Jan 2015	1.281	Jan 2016	-		1.281	11.004	24.975	-
Subtotal			10.511	0.906		1.273		1.281		-		1.281	11.004	24.975	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	311.325	68.564	82.195	46.160	-	46.160	335.699	843.943	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force			Date: February 2015		
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Lot 28 (FY14 funds) contract award																												
AIM-120D OT																												
AIM-120D SIP-1 Increment OT																												
AIM-120D SIP-1 Increment IOC																												
AIM-120D SIP-2 PDR																												
AIM-120D SIP-2 CDR																												
AIM-120D SIP-2 Increment 1 EMD																												
AIM-120D SIP TMRR																												
FCA for C-3/4/5/6 EPIP Basic																												
EPIP Adv Tape 1 CDR																												
EPIP Adv Tape 1 FCA																												
EPIP Adv Tape 2 CDR																												
EPIP Adv Tape 2 FCA																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Lot 28 (FY14 funds) contract award	1	2015	1	2015
AIM-120D OT	1	2014	4	2014
AIM-120D SIP-1 Increment OT	3	2015	1	2016
AIM-120D SIP-1 Increment IOC	1	2016	1	2016
AIM-120D SIP-2 PDR	3	2015	3	2015
AIM-120D SIP-2 CDR	3	2016	3	2016
AIM-120D SIP-2 Increment 1 EMD	4	2015	4	2017
AIM-120D SIP TMRR	4	2015	2	2018
FCA for C-3/4/5/6 EPIP Basic	4	2014	4	2014
EPIP Adv Tape 1 CDR	1	2014	1	2014
EPIP Adv Tape 1 FCA	2	2016	2	2016
EPIP Adv Tape 2 CDR	3	2015	3	2015
EPIP Adv Tape 2 FCA	3	2017	3	2017