

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force **Date:** March 2014

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>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>
--	--

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	242.669	68.656	70.614	82.195	-	82.195	46.467	55.884	62.123	66.289	106.600	801.497
673777: <i>AMRAAM</i>	242.669	68.656	70.614	82.195	-	82.195	46.467	55.884	62.123	66.289	106.600	801.497
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

MDAP/MAIS Code: 185

The FY 2015 OCO Request will be submitted at a later date.

Note

A. Mission Description and Budget Item Justification

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 to be compatible 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 successfully completed in May 2012 and the program is in dedicated Operational Testing (OT). The aircraft integration program maintains compatibility/performance of the missile with changes occurring on the F/A-18E/F, F-15C/D/E, F-16, F-22A, and F-18 C/D platforms. 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.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
--	-------------------------

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>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>
--	--

B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	87.041	84.172	83.222	-	83.222
Current President's Budget	68.656	70.614	82.195	-	82.195
Total Adjustments	-18.385	-13.558	-1.027	-	-1.027
• Congressional General Reductions	-0.115	-			
• Congressional Directed Reductions	-	-13.558			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-9.000	-			
• SBIR/STTR Transfer	-2.175	-			
• Other Adjustments	-7.095	-	-1.027	-	-1.027

Change Summary Explanation

FY2013 reduction of -\$7.095M for Sequestration
 FY2013 other reduction of -\$9.000M for higher Air Force priorities
 FY2014 reduction of -\$13.558M for congressional directed program decrease.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
---	----------------	----------------	----------------

Title: System Improvement Program (SIP)/Software Upgrade Program (SWUP)/Electronic Protection Improvement Program (EPIP)	42.196	35.916	40.661
---	--------	--------	--------

Description: Provide software upgrades/system improvements/electronic protection improvements (SWUP/SIP/EPIP)

FY 2013 Accomplishments:

1. AIM-120C SWUP: Matured AIM-120C missile software candidates to a Preliminary Design Review (PDR) level. Candidates provide improvements to tactical missile software and enhance the fidelity of simulation performance predictions.
2. EPIP Basic and Advanced: Completed EPIP Basic Integrated Test (IT) live fire program and a Functional Configuration Audit (FCA) for AIM-120C-7 configuration and released missile software for dedicated OT. Completed 2 of 3 EPIP Basic AIM-120C-3 through C-6 IT live fire events. Continued Advanced EPIP implementation effort to address advanced threats in AIM-120C-7 missile software and began DT flight test. Completed upgrades to China Lake Hardware-in-the-Loop (HWIL) facility to support the Advanced EPIP program.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force		Date: March 2014		
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>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
<p>3. AIM-120D SIP: Continued candidate evaluation, selection and design activities including lab and captive flight tests activities for system performance upgrades. Completed SIP-1 Critical Design Review (CDR) and released software for DT flight test. Continued studies of additional software improvements to keep pace with evolving threats and parts obsolescence.</p> <p>FY 2014 Plans:</p> <p>1. AIM-120C SWUP: Continues maturing AIM-120C missile software candidates, target models and simulation tools. Candidates provide improvements to tactical missile software and enhance the fidelity of simulation performance predictions.</p> <p>2. EPIP Basic and Advanced: Completes EPIP Basic IT live fire program and a Functional Configuration Audit (FCA) for AIM-120C-3/4/5/6 configurations and releases missile software for dedicated OT. Continues Advanced EPIP implementation effort for AIM-120C-7 to address advanced threats. Completes CDR for EPIP Advanced software Tape 1. Continues development efforts for Advanced EPIP software Tape 2.</p> <p>3. AIM-120D SIP: Continues candidate evaluation, selection and design activities including lab and captive flight test activities for potential system performance upgrades. Continues SIP-1 software development phase and awards SIP-2 software development contract. Continues studies of additional software improvements to keep pace with evolving threats and parts obsolescence.</p> <p>FY 2015 Plans:</p> <p>1. AIM-120C SWUP: Continues maturing AIM-120C missile software candidates, target models and simulation tools. Candidates provide improvements to tactical missile software and enhance the fidelity of simulation performance predictions.</p> <p>2. EPIP Advanced: Continues EPIP Advanced software development of Tapes 1 and 2 as well as simulation improvements to address advanced threats. Completes EPIP Advanced software Tape 1 Formal Qualification Testing (FQT) and releases software for IT live fire program. Completes CDR for EPIP Advanced software Tape 2 and continues development.</p> <p>3. AIM-120D SIP: Continues candidate evaluation, selection and design activities including lab and captive flight test activities for potential system performance upgrades. Completes SIP-1 FCA and Operational Test Readiness Review (OTRR) of tactical missile software. Completes SIP-2 PDR and continues software development phase. Continues studies of additional software improvements to keep pace with evolving threats and parts obsolescence.</p>				
Title: Test and Evaluation		7.156	12.805	16.594
Description: Continue test and evaluation; Provides support to DT/OT.				
FY 2013 Accomplishments:				

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
--	-------------------------

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>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>
--	--

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p>Continued dedicated AIM-120D OT on F/A-18E/F and F-15C/D. Continued infrastructure investments to support AIM-120D OT, SIP, SWUP and EPIP activities. Completed EPIP Basic AIM-120C-7 IT live fire program. Began EPIP Basic AIM-120C-7 dedicated OT flight test program. Completed 2 of 3 EPIP Basic AIM-120C-3/4/5/6 IT live fire missions. Started the EPIP Advanced DT captive carry program.</p> <p>FY 2014 Plans: Completes AIM-120D dedicated OT. Completes the last EPIP Basic IT live fire event for AIM-120C-3/4/5/6 configurations. Completes OT for EPIP Basic AIM-120C-7 & AIM-120C-3/4/5/6 configurations. Continues DT for the EPIP Advanced program. Begins SIP-1 OT.</p> <p>FY 2015 Plans: Completes SIP-1 OT. Supports initial fielding for AIM-120D on F/A-18 E/F and F-15 C/D. Completes DT captive flight testing and FQT for EPIP Advanced Tape 1 and begins IT live fire tests. Continues DT captive flight tests for EPIP Advanced Tape 2.</p>			
<p>Title: Aircraft Integration</p> <p>Description: Aircraft Integration - Integrate AIM-120D on multiple aircraft platforms.</p> <p>FY 2013 Accomplishments: Aircraft Integration - Continued integration and testing of AIM-120D on multiple threshold aircraft platforms.</p> <p>FY 2014 Plans: Aircraft Integration - Continues integration and testing of AIM-120D on multiple threshold aircraft platforms.</p> <p>FY 2015 Plans: Aircraft Integration - Continues integration and testing of AIM-120D on multiple threshold aircraft platforms.</p>	19.304	21.893	24.940
Accomplishments/Planned Programs Subtotals	68.656	70.614	82.195

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA02: Line Item # MAMRA0: <i>Missile Procurement, Air Force</i>	201.370	323.015	329.600	-	329.600	367.944	402.093	455.149	460.807	2,078.842	2,338.600
• MPAF: BA04: Line Item # MAMRA0: <i>Initial Spares/Repair Parts</i>	0.805	0.893	2.861	-	2.861	2.884	2.903	2.921	2.940	-	-

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force **Date:** March 2014

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>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>
--	--

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• WPN: BA02: Line Item # 2206: <i>Weapons Procurement, Navy</i>	86.883	82.529	32.165	-	32.165	194.767	210.749	269.200	315.951	1,695.381	4,923.514
• RDTE: BA07: Line Item # 0981: <i>RDTE, Navy</i>	2.669	2.613	10.210	-	10.210	32.549	44.312	46.208	32.348	15.275	300.134

Remarks

E. Acquisition Strategy

The AIM-120D program entered dedicated Operational Testing (OT) in June 2012. This OT phase will continue to the end of 3QTR FY14, with the OT report released within 90 days, followed by initial fielding by the Air Force and Navy. Post-OT missile improvements are underway as part of the AIM-120D upgrade program. The System Improvement Program, Increment 1 (SIP-1) has begun and is expected to field in early FY15. Additional SIP increments are in the planning phase and will further improve the AIM-120D to meet emerging warfighter requirements.

The Electronic Protection Improvement Program (EPIP) is also underway, with the initial capabilities currently in flight testing. EPIP Basic capabilities will field in FY14. The EPIP effort will keep AIM-120C missiles capable against the growing electronic attack threat environment. Additional capabilities (EPIP Advanced) are in the detail design stage with initial fielding projected for FY16.

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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force **Date:** March 2014

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207163F / <i>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>	Project (Number/Name) 673777 / AMRAAM
--	--	---

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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 Upgrade Program (SWUP)/System Improvement Program (SIP)/Electronic Protection (EP)	SS/CPFF	Raytheon : Tucson, AZ	108.487	42.464	Mar 2013	40.784	Mar 2014	46.054	Mar 2015	-		46.054	264.469	502.258	TBD
Aircraft Integration	MIPR	Wright-Patterson AFB : Dayton, OH	64.042	18.590	Jun 2013	20.830	Jan 2014	24.940	Jan 2015	-		24.940	18.340	146.742	TBD
Subtotal			172.529	61.054		61.614		70.994		-		70.994	282.809	649.000	-

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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			
Subtotal			-	-		-		-		-		-	-	-	-

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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 Test	WR	Various : Various,	61.278	6.553	Jan 2013	7.801	Jan 2014	9.887	Jan 2015	-		9.887	45.097	130.616	TBD
Subtotal			61.278	6.553		7.801		9.887		-		9.887	45.097	130.616	-

Remarks
Various = T&E activities take place at numerous locations across the US. Too many activities and locations to list.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force

Date: March 2014

Appropriation/Budget Activity
3600 / 7

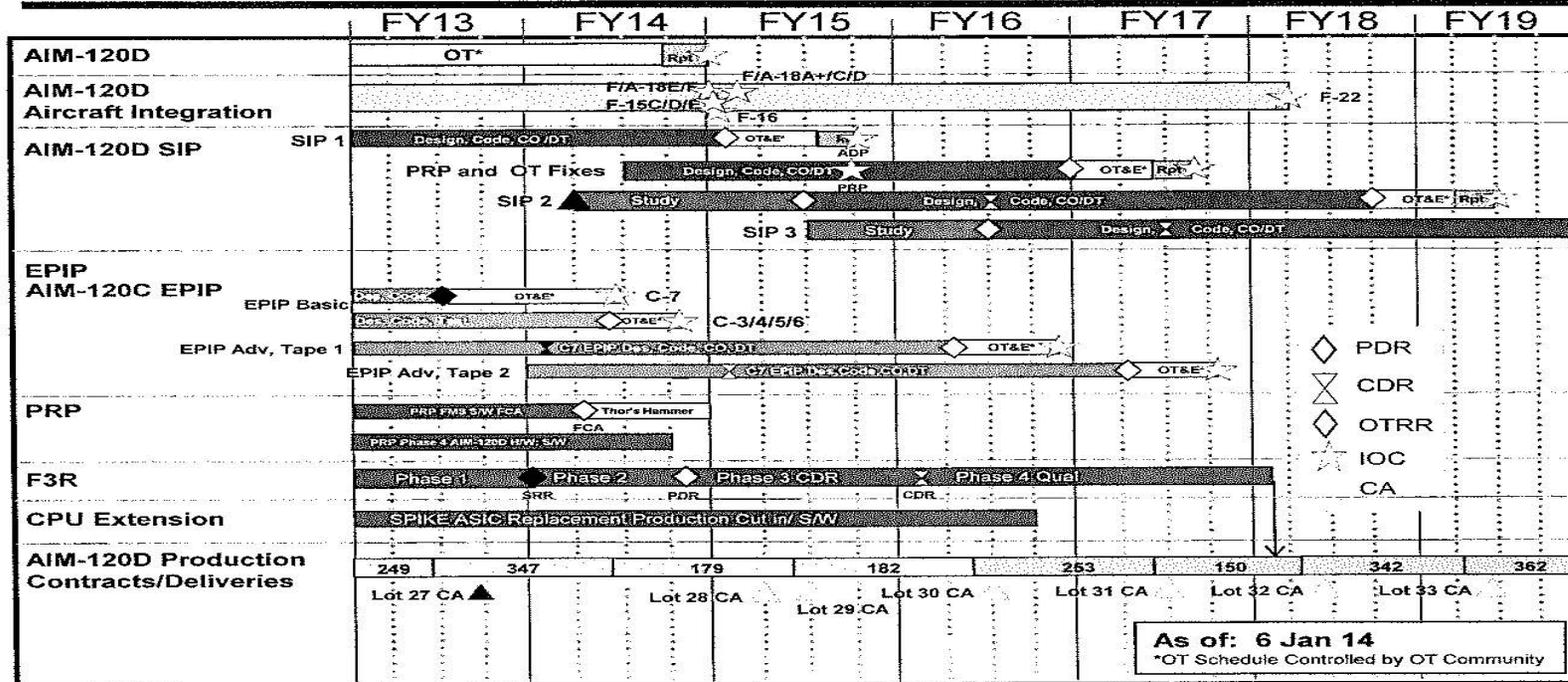
R-1 Program Element (Number/Name)
PE 0207163F / Advanced Medium Range
Air-to-Air Missile (AMRAAM)

Project (Number/Name)
673777 / AMRAAM



AMRAAM Program Schedule

U.S. AIR FORCE



UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207163F / <i>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>	Project (Number/Name) 673777 / AMRAAM

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Lot 28 (FY14) contract award	1	2015	1	2015
AIM-120D OT	1	2013	4	2014
Lot 27 (FY13) contract award	3	2013	3	2013
AIM-120D SIP 1 Increment OT	1	2015	3	2015
AIM-120D SIP 1 Increment IOC	4	2015	4	2015
FCA for C-7 EPIP Basic	2	2013	2	2013
FCA for C-3/4/5/6 EPIP Basic	2	2014	2	2014
EPIP Adv Tape 1 CDR	1	2014	1	2014
EPIP Adv Tape 1 FCA	1	2016	1	2016
EPIP Adv Tape 2 CDR	1	2015	1	2015
EPIP Adv Tape 2 FCA	1	2017	1	2017