

UNCLASSIFIED

PE NUMBER: 0207163F
 PE TITLE: Advanced Medium Range Air-to-Air Missile

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2008
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207163F Advanced Medium Range Air-to-Air Missile
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Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	33.411	33.425	54.239	39.955	40.311	22.785	12.762	Continuing	TBD
3777 AMRAAM	33.411	33.425	54.239	39.955	40.311	22.785	12.762	Continuing	TBD

(U) 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 having advanced Electronic Protection (EP) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program provides for a continuing, Joint Air Force/Navy research and development program which enables AMRAAM to: (1) be compatible with advanced fighters, (2) enhance AMRAAM capability and operational flexibility against 2010 and beyond threats, (3) incorporate high payoff technology developments, and (4) investigate new variants and/or alternate missions which may use AMRAAM attributes.

Improvements delivered under the original three-phase P3I program include enhanced EP capabilities and improved weapon effectiveness through improved fuzing, guidance, and increased kinematics. The current improvement program, referred to as AMRAAM Phase 4 will lead to introduction of the AIM-120D, delivering improved AMRAAM performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporating new guidance software which will improve AMRAAM's kinematic and weapon effectiveness performance. AMRAAM is a joint Air Force/Navy, Acquisition Category (ACAT) IC program with Air Force as lead service.

To keep the existing inventory as effective as possible the AF and Navy also develop, test and incorporate improvements that are implemented via software upgrades, reprogrammed into fielded weapons.

This program is in budget activity 7 - Operational System Development, providing upgrades to the AIM-120C missile currently in production.

Funding begins in FY09 for concept studies in support of Joint Dual Role Air Dominance Missile (JDRADM).

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(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	43.253	36.838	45.879
(U) Current PBR/President's Budget	33.411	33.425	54.239
(U) Total Adjustments	-9.842	-3.413	
(U) Congressional Program Reductions		-3.200	
Congressional Rescissions		-0.213	
Congressional Increases			
Reprogrammings	-8.651		
SBIR/STTR Transfer	-1.191		
(U) <u>Significant Program Changes:</u>			
FY09 funding increase is for AIM-120D SDD completion and multiple aircraft integration/testing.			

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 07 Operational System Development							PE NUMBER AND TITLE 0207163F Advanced Medium Range Air-to-Air Missile		PROJECT NUMBER AND TITLE 3777 AMRAAM	
Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total	
3777 AMRAAM	33.411	33.425	54.239	39.955	40.311	22.785	12.762	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0			

(U) 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 having advanced Electronic Protection (EP) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program provides for a continuing, Joint Air Force/Navy research and development program which enables AMRAAM to: (1) be compatible with advanced fighters, (2) enhance AMRAAM capability and operational flexibility against 2010 and beyond threats, (3) incorporate high payoff technology developments, and (4) investigate new variants and/or alternate missions which may use AMRAAM attributes.

Improvements delivered under the original three-phase P3I program include enhanced EP capabilities and improved weapon effectiveness through improved fuzing, guidance, and increased kinematics. The current improvement program, referred to as AMRAAM Phase 4 will lead to introduction of the AIM-120D, delivering improved AMRAAM performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporating new guidance software which will improve AMRAAM's kinematic and weapon effectiveness performance. AMRAAM is a joint Air Force/Navy, Acquisition Category (ACAT) IC program with Air Force as lead service.

To keep the existing inventory as effective as possible the AF and Navy also develop, test and incorporate improvements that are implemented via software upgrades, reprogrammed into fielded weapons.

This program is in budget activity 7 - Operational System Development, providing upgrades to the AIM-120C missile currently in production.

Funding begins in FY09 for concept studies in support of Joint Dual Role Air Dominance Missile (JDRADM).

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Continue effort to complete qualification of the Phase 4 missile design	14.700	11.700	12.500
(U) Continue to provide software upgrades/system improvement program (SIP)	1.000	2.000	6.000
(U) Continue mission support: Provide program management to execute Phase 4 program	1.770	1.629	1.611
(U) Continue test and evaluation: Provide support to DT and OT	2.256	6.561	13.147
(U) Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms	9.055	11.535	13.981
(U) Develop AMRAAM field reprogrammer	4.630	0.000	0.000
(U) Joint Dual Role Air Dominance Missile (JDRADM)	0.000	0.000	7.000
(U) Total Cost	33.411	33.425	54.239

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PROJECT NUMBER AND TITLE

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Missile Procurement, Budget Activity #2, PE 0207163F, P-1 Line Item, AMRAAM	114.247	193.261	294.746	283.312	301.712	307.410	313.846	0.000	1,808.534
(U) Replenishment Spares, BP25 and Missile Replacement Equipment	0.201	0.204	0.211	0.215	0.220	0.224	0.229	0.000	1,504.000
(U) Initial Spares, BP26	1.232	0.075	0.077	0.078	0.081	0.083	0.085	0.000	62.711
(U) AMRAAM Field Reprogrammer, BP 22	0.000	5.745	5.739	5.346	0.000	0.000	0.000	0.000	16.830

(U) **D. Acquisition Strategy**

The AIM-120D SDD contract, awarded in Dec 03, is intended to meet the requirement to evolve the AMRAAM for improved performance. Initial limited production of the AIM-120D missile began in FY06. The AIM-120D Missile Performance Specification (MPS) and Interface Control Document (ICD) define the requirement to integrate the Phase 4 AMRAAM onto the F-15, F-16, and F-22A.

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Exhibit R-3, RDT&E Project Cost Analysis

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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2007 Cost</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>												
Misc. Contracts	SS/FFP									0.000	0.000	15.987
F08635-90-C-0201 Hughes	SS/FFP	Hughes								0.000	0.000	5.200
F08626-91-C-0034 Hughes	SS/CPIF	Hughes								0.000	0.000	93.506
F08626-93-C-0044 (Phase 2) Hughes	SS/CPAF	Hughes								0.000	0.000	117.558
Phase 3 Risk Reduction	SS/CPAF	Raytheon, Tucson, AZ								0.000	0.000	24.484
Phase 3 Improved Fuzing Capability	SS/CPAF	Raytheon, Tucson, AZ								0.000	0.000	3.937
Phase 3 Improved Seeker and Advanced EP. Raytheon F08626-98-C-0027	SS/CPAF	Raytheon, Tucson, AZ								0.000	0.000	207.755
Software Upgrade/System Improvement Program (SIP)	SS/CPFF	Raytheon, Tucson, AZ		1.000	Sep-07	2.000	Jun-08	6.000	Mar-09	63.000	72.000	72.000
Phase 4 Contract FA8675-04-C-0001	SS/CPFF	Raytheon, Tucson, AZ		14.700	Dec-06	11.700	Jan-08	12.500	Nov-08	0.000	38.900	118.016
Phase 4 Follow-On Contract	SS/CPFF	Raytheon, Tucson, AZ								53.600	53.600	77.311
Aircraft Integration	MIPR	Wright-Patters on AFB, OH		9.055	Dec-06	11.535	Dec-07	13.981	Mar-09	65.429	100.000	116.830
AMRAAM Field Reprogrammer		Raytheon, Tucson, AZ		4.630	Jan-07					0.000	4.630	14.000
Joint Dual Role Air Dominance Missile (JDRADM)						0.000		7.000		6.400	13.400	16.200
Subtotal Product Development			0.000	29.385		25.235		39.481		188.429	282.530	882.784
Remarks:		*Note: Hughes became part of Raytheon Systems effective Dec 97										
<u>(U) Support</u>												
COEA	PO/MIPR									0.000	0.000	3.358
Contractor Support	REO/PR			1.021		0.950		0.892		4.232	7.095	26.136
JSPO Operations	PR/IMPAC			0.749		0.679		0.719		3.078	5.225	25.840
Subtotal Support			0.000	1.770		1.629		1.611		7.310	12.320	55.334
Remarks:												
<u>(U) Test & Evaluation</u>												
Government Test	REO/MIPR			2.256		6.561		13.147		0.000	21.964	47.229
TM/ECM Pods	REO/MIPR									0.000	0.000	2.818
Subtotal Test & Evaluation			0.000	2.256		6.561		13.147		0.000	21.964	50.047
Remarks:												
<u>(U) Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000

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Project 3777

Exhibit R-3 (PE 0207163F)

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PROJECT NUMBER AND TITLE

3777 AMRAAM

Remarks:
(U) Total Cost

0.000	33.411	33.425	54.239	195.739	316.814	988.165
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Exhibit R-4, RDT&E Schedule Profile

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AMRAAM Schedule

As of: 21 Dec 07

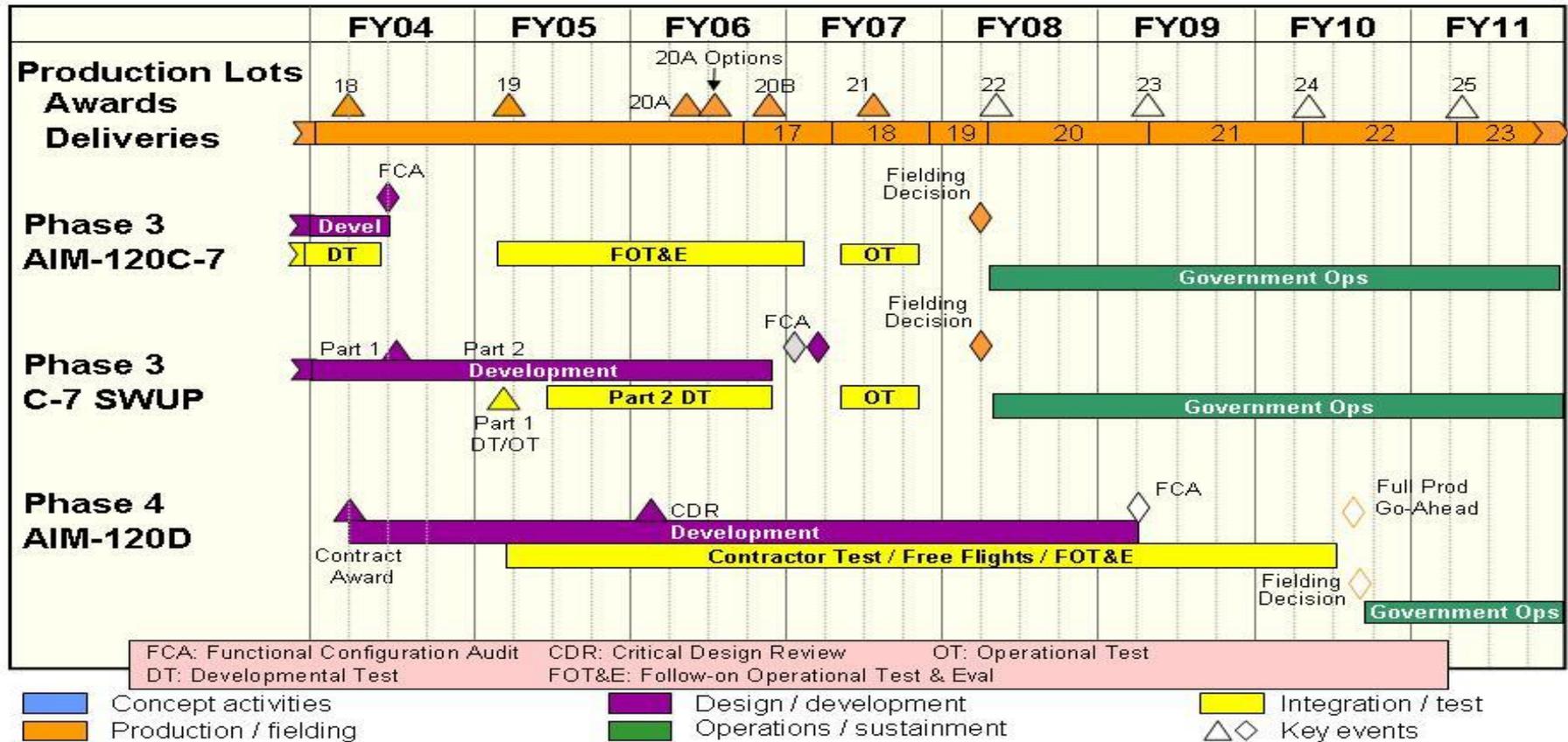


Exhibit R-4a, RDT&E Schedule Detail

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(U) Schedule Profile

(U) First Captive Carriage F-15 C/D

(U) First Live Launch (from F/A-18 E/F)

(U) Functional Configuration Audit (FCA)

FY 2007

3Q

FY 2008

1Q

FY 2009

1Q