

UNCLASSIFIED

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

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
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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 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	36.414	54.092	49.971	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
3777 AMRAAM	36.414	54.092	49.971	0.000	0.000	0.000	0.000	0.000	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 be compatible with advanced fighters, enhance AMRAAM capability and operational flexibility against 2010 and beyond threats, incorporate high payoff technology developments, and 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, AIM-120D (Phase 4) will deliver improved performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which will improve kinematic and weapon effectiveness performance. Phase 4 Functional Configuration Audit (FCA) will complete in June 09 with Initial Operational Capability (IOC) on the F/A-18 E/F and F-15 C/D the first quarter of FY11. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (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, and/or hardware upgrades inserted into production units. Also, funding begins in FY09 for risk reduction studies in support of the Joint Dual Role Air Dominance Missile (JDRADM). JDRADM funding in FY10 and out is in Program Element (PE) 0604330F.

This program is in budget activity 7 - Operational System Development, providing upgrades to AIM-120 missiles currently fielded or in production.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	33.425	54.239	39.955
(U) Current PBR/President's Budget	36.414	54.092	49.971
(U) Total Adjustments	2.989	-0.147	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.147	
Congressional Increases			
Reprogrammings	3.900		
SBIR/STTR Transfer	-0.911		

(U) Significant Program Changes:

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FY08 \$3.9M reprogrammed for Electronic Protection software.
FY10 funding increase is for AIM-120 software upgrades and F-22 integration.

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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 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
3777 AMRAAM	36.414	54.092	49.971	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	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 be compatible with advanced fighters, enhance AMRAAM capability and operational flexibility against 2010 and beyond threats, incorporate high payoff technology developments, and 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, AIM-120D (Phase 4) will deliver improved performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which will improve kinematic and weapon effectiveness performance. Phase 4 Functional Configuration Audit (FCA) will complete in June 09 with Initial Operational Capability (IOC) on the F/A-18 E/F and F-15 C/D the first quarter of FY11. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (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, and/or hardware upgrades inserted into production units. Also, funding begins in FY09 for risk reduction studies in support of the Joint Dual Role Air Dominance Missile (JDRADM). JDRADM funding in FY10 and out is in Program Element (PE) 0604330F.

This program is in budget activity 7 - Operational System Development, providing upgrades to AIM-120 missiles currently fielded or in production.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue effort to complete qualification of the Phase 4 missile design	15.849	9.000	0.000
(U) Continue to provide software upgrades/system improvement/electronic protection	3.888	5.000	29.300
(U) Continue mission support: Provide program management to execute Phase 4 program	1.991	2.404	2.125
(U) Continue test and evaluation: Provide support to DT/OT	8.586	18.025	4.007
(U) Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms	6.100	12.663	14.539
(U) Joint Dual Role Air Dominance Missile (JDRADM)	0.000	7.000	0.000
(U) Total Cost	36.414	54.092	49.971

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Air-to-Air Missile**

PROJECT NUMBER AND TITLE

3777 AMRAAM

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

	<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>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Missile Procurement, Budget Activity #2, PE 0207163F, P-1 Line Item, AMRAAM	190.797	203.841	291.827	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Replenishment Spares, BP25 and Missile Replacement Equipment	0.204	0.211	0.803	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Initial Spares, BP26	3.645	0.077	0.077	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) AMRAAM Field Reprogrammer, BP 22	5.716	5.722	5.264							16.702

(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 2008 Cost</u>	<u>FY 2008</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>			
(U) <u>Product Development</u>												
Software Upgrade/System Improvement/Electronic Protection	SS/CPFF	Raytheon, Tucson, AZ		3.888	Sep-08	5.000	Apr-09	29.300	Mar-10	Continuing	TBD	TBD
Phase 4 Contract FA8675-04-C-0001	SS/CPFF	Raytheon, Tucson, AZ		15.849	May-08	9.000	Mar-09			Continuing	TBD	TBD
Phase 4 Follow-On Contract	SS/CPFF	Raytheon, Tucson, AZ									0.000	
Aircraft Integration	MIPR	Wright-Patters on AFB, OH		6.100	Dec-07	12.663	Jan-09	14.539	Jan-10	Continuing	TBD	TBD
Joint Dual Role Air Dominance Missile (JDRADM)						7.000	Jan-09			Continuing	TBD	TBD
Subtotal Product Development			0.000	25.837		33.663		43.839		Continuing	TBD	TBD
Remarks:												
												*Note: Hughes became part of Raytheon Systems effective Dec 97
(U) <u>Support</u>												
COEA	PO/MIPR									Continuing	TBD	TBD
Contractor Support	REO/PR			0.650		0.702		0.358		Continuing	TBD	TBD
JSPO Operations	PR/IMPAC			1.341		1.702		1.767		Continuing	TBD	TBD
Subtotal Support			0.000	1.991		2.404		2.125		Continuing	TBD	TBD
Remarks:												
(U) <u>Test & Evaluation</u>												
Government Test	REO/MIPR			8.586		18.025		4.007		Continuing	TBD	TBD
TM/ECM Pods	REO/MIPR									Continuing	TBD	TBD
Subtotal Test & Evaluation			0.000	8.586		18.025		4.007		Continuing	TBD	TBD
Remarks:												
(U) <u>Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	36.414		54.092		49.971		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

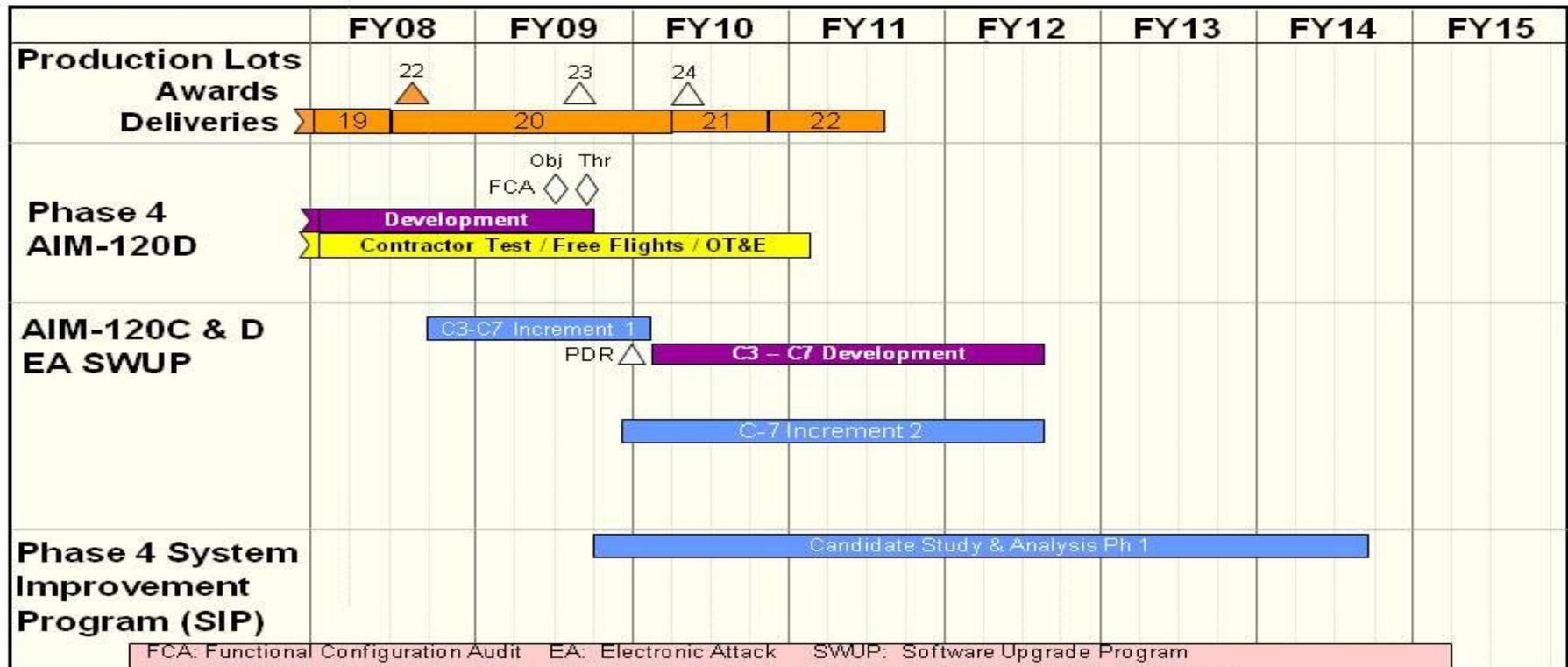
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FCA: Functional Configuration Audit EA: Electronic Attack SWUP: Software Upgrade Program
SIP: System Improvement Program OT&E: Operational Test & Eval PDR: Preliminary Design Review

- Concept activities
- Production / fielding
- Design / development
- Integration / test
- Key events

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Exhibit R-4a, RDT&E Schedule Detail

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(U) <u>Schedule Profile</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) First live launch (F/A-18E/F)	1Q		
(U) Lot 22 (FY08) contract award	3Q		
(U) First live launch (F-15 C/D)	4Q		
(U) Functional Configuration Audit (FCA)		3Q	
(U) System Improvement Program (SIP) contract award		3Q	
(U) Lot 23 (FY09) contract award		2Q	
(U) Lot 24 (FY10) contract award			2Q

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