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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0207163F: Advanced Medium Range Air-to-Air Missile (AMRAAM)							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	75.282	87.041	84.172	-	84.172	83.222	42.469	35.305	35.940	Continuing	Continuing
673777: AMRAAM	-	75.282	87.041	84.172	-	84.172	83.222	42.469	35.305	35.940	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
MDAP/MAIS Code(s): 185												
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
^{##} The FY 2014 OCO Request will be submitted at a later date												
Note												
The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.												
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 (AIM-120As, Bs, and Cs), 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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	77.830	87.041	88.849	-	88.849
Current President's Budget	75.282	87.041	84.172	-	84.172
Total Adjustments	-2.548	0.000	-4.677	-	-4.677
• Congressional General Reductions	-	0.000			
• Congressional Directed Reductions	-	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	-	0.000			
• Congressional Directed Transfers	-	0.000			
• Reprogrammings	-0.225	0.000			
• SBIR/STTR Transfer	-2.323	0.000			
• Other Adjustments	0.000	0.000	-4.677	-	-4.677
Change Summary Explanation FY 2014 (-\$4.677) funding rephased					
C. Accomplishments/Planned Programs (\$ in Millions)			FY 2012	FY 2013	FY 2014
Title: System Improvement Program (SIP)/Software Upgrade Program (SWUP)/Electronic Protection Improvement Program (EPIP)			36.894	46.409	48.629
Description: Provide software upgrades/system improvements/electronic protection improvements (SWUP/SIP/EPIP)					
FY 2012 Accomplishments: 1. AIM-120C SWUP: Brought the set of performance candidates to a Preliminary Design Review (PDR) level of maturity. Candidates provided improvements to C-7 tactical software and simulation model upgrades to enhance the fidelity of missile performance predictions. 2. EPIP: Completed development captive flight testing and Formal Qualification Testing (FQT) for all AIM-120C configurations. Released software for the live fire integrated test program (combined Developmental/Operational Test -DT/OT). Conducted PDR and began the implementation effort to address advanced threats in AIM-120C-7 missiles. In addition, started upgrades to China Lake Hardware-in-the-Loop (HWIL) and contractor facility to support the EPIP program. 3. AIM-120D SIP: Continued candidate evaluation and preliminary design activities, including lab and captive flight tests, which provided data necessary to evaluate performance and feasibility of potential upgrades. Completed resolution of AIM-120D issues identified during DT and delivered AIM-120D software to OT. Awarded a contract to implement the SIP 1 increment, conducted PDR, and continued progressing towards Critical Design Review (CDR). Continued study of efficient/effective integration of other system improvements, parts obsolescence issues, and cost reduction initiatives to keep pace with evolving threats.					
FY 2013 Plans:					

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
1. AIM-120C SWUP: Effort includes maturing new target models and simulation candidates. Effort will also include potential software candidate studies. Candidates will provide improvements to C-7 tactical software and simulation model upgrades to enhance the fidelity of missile performance predictions. 2. EPIP Basic and Advanced: Completes the EPIP Basic integrated live fire test program for all AIM-120C configurations and releases software for dedicated operational testing. Continues implementation effort to address advanced threats in AIM-120C-7 missiles, begins DT for the EPIP Advanced program and conducts CDR for EPIP Advanced software Tape 1. Initiates development efforts for EPIP Advanced software Tape 2, and continues China Lake HWIL upgrades in support of AIM-120C-7 and D software development efforts. 3. AIM-120D SIP: 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 implementation for SIP 1 improvements, conducts SIP 1 CDR, and delivers SIP 1 to OT. Awards SIP 2 contract to mature EPIP algorithms to PDR level for integration on AIM-120D. Planned tasks also include captive flight test missions, completion of SIP 1 CDR and continued study of efficient/effective integration of other system improvements, parts obsolescence issues, and cost reduction initiatives to keep pace with evolving threats. FY 2014 Plans: 1. AIM-120C SWUP: Continues vulnerability analyses of new target models that AMRAAM (AIM-120Cs and D missiles) will engage. Studies software candidates to provide improvements to C-7 tactical software and upgrades simulation model upgrades to enhance the fidelity of missile performance predictions. 2. EPIP: Continues EPIP Advanced software development of Tapes 1 and 2 as well as simulation improvements to address advanced threats. Completes software development captive flight testing and Formal Qualification Testing (FQT) for Tape 1. Releases software for the live fire integrated test program. Conducts CDR for the EPIP Advanced software Tape 2. Continues China Lake HWIL upgrades in support of AIM-120D software development efforts. 3. AIM-120D SIP: Continues candidate evaluation/selection, and design activities, including lab and/or captive flight tests to provide data necessary to evaluate performance and feasibility of potential upgrades. Completes SIP 1 OT Readiness Review (OTRR) and delivers software to OT. Continues SIP 2 development phase. Planned tasks include captive flight test missions, completion of SIP 1 FCA and SIP 2 PDR, and continued study of efficient/effective integration of other system improvement, parts obsolescence issues, and cost reduction initiatives to keep pace with evolving threats.				
Title: Test and Evaluation Description: Continue test and evaluation; Provides support to DT/OT. FY 2012 Accomplishments: Started dedicated AIM-120D OT. Accomplished OT Readiness Review (OTRR), certified the missile ready for dedicated OT, and started dedicated OT captive carry and free flight on F/A-18E/F and F-15C/D. Continued infrastructure investments to support		18.863	17.537	8.266

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
AIM-120D OT, SIP, SWUP and EPIP activities. Began EPIP Basic live fire flight test program. This consists of integrated DT/OT captive missions, pre-flight missions, and missile launches. FY 2013 Plans: Continues AIM-120D dedicated OT, to include captive carry and free flight. Completes EPIP Basic integrated DT/OT flight test program, consisting of both captive missions and missile launches. Begins EPIP Basic dedicated OT. This will consist of live fire launches and multiple captive missions. Begins EPIP Advanced DT. FY 2014 Plans: Completes AIM-120D dedicated OT, to include captive carry and free flight. Fields AIM-120D on F/A-18 E/F and F-15 C/D. Begins integrated (DT/OT) live fire testing with EPIP Advanced software Tape 1. Begins developmental captive flight test missions associated with EPIP Tape 2.				
Title: Aircraft Integration Description: Aircraft Integration - Integrate AIM-120D on multiple aircraft platforms. FY 2012 Accomplishments: Aircraft Integration - Continued integration and testing of AIM-120D on multiple threshold aircraft platforms. FY 2013 Plans: Aircraft Integration - Continues integration and testing of AIM-120D on multiple threshold aircraft platforms. FY 2014 Plans: Aircraft Integration - Continues integration and testing of AIM-120D on multiple threshold aircraft platforms.		17.882	21.590	25.758
Title: PMA Description: PMA support continues for our Technical and Acquisition Management Support (TAMS) 4 contract. Additionally funds supplies required to support normal program office functions and the travel required for mission accomplishment. FY 2012 Accomplishments: PMA support continued for our Technical and Acquisition Management Support (TAMS) 4 contract. Additionally funded supplies required to support normal program office functions and the travel required for mission accomplishment. FY 2013 Plans: PMA support continues for our Technical and Acquisition Management Support (TAMS) 4 contract. Additionally funds supplies required to support normal program office functions and the travel required for mission accomplishment. FY 2014 Plans:		1.643	1.505	1.519

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C. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
PMA support continues for our Technical and Acquisition Management Support (TAMS) 4 contract. Additionally funds supplies required to support normal program office functions and the travel required for mission accomplishment.												
Accomplishments/Planned Programs Subtotals										75.282	87.041	84.172
D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• MPAF: BA02: PE 0207163F: AMRAAM Missile Procurement	202.176	229.637	340.015		340.015	355.021	373.810	373.772	380.500	2,431.222	12,402.053	
• MPAF, BA02: PE 0207163F: AMRAAM Replen Spares	0.804	0.805	0.809		0.809	0.808	0.823	0.838	0.853	5.450	0.000	
• MPAF: BA04: PE 0207163F: AMRAAM Initial Spares	0.082	0.082	0.084		0.084	0.085	0.087	0.089	0.091	0.581	75.681	
• MPAF: BA01: PE 0207163F: MPAF, Modifications	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	16.704	
Remarks												
E. Acquisition Strategy												
The AIM-120D program entered dedicated Operational Testing (OT) in June 2012. This OT phase will continue into early FY14, with initial fielding by the Air Force and Navy projected in FY14. 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 late FY14. 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 FY15.												
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 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>						R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile (AMRAAM)</i>						PROJECT 673777: <i>AMRAAM</i>			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Upgrade Program (SWUP)/System Improvement Program (SIP)/Electronic Protection (EP)	SS/CPFF	Raytheon:Tucson, AZ	-	37.797	Jan 2012	49.378	Mar 2013	50.437	Jan 2014	-		50.437	Continuing	Continuing	TBD
Aircraft Integration	MIPR	Wright-Patterson AFB:Dayton, OH	-	17.882	Mar 2012	23.528	Mar 2013	25.758	Jan 2014	-		25.758	Continuing	Continuing	TBD
Subtotal			0.000	55.679		72.906		76.195		0.000		76.195			
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 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint System Program Office (JSPO) Operations	Various	Eglin AFB:Ft Walton Beach, FL	-	1.643	Jan 2012	1.505	Jan 2013	1.519	Jan 2014	-		1.519	Continuing	Continuing	TBD
Subtotal			0.000	1.643		1.505		1.519		0.000		1.519			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	WR	Various:Various,	-	17.960	Jan 2012	12.630	Jan 2013	6.458	Jan 2014	-		6.458	Continuing	Continuing	TBD
Subtotal			0.000	17.960		12.630		6.458		0.000		6.458			
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 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	75.282	87.041	84.172	0.000	84.172			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

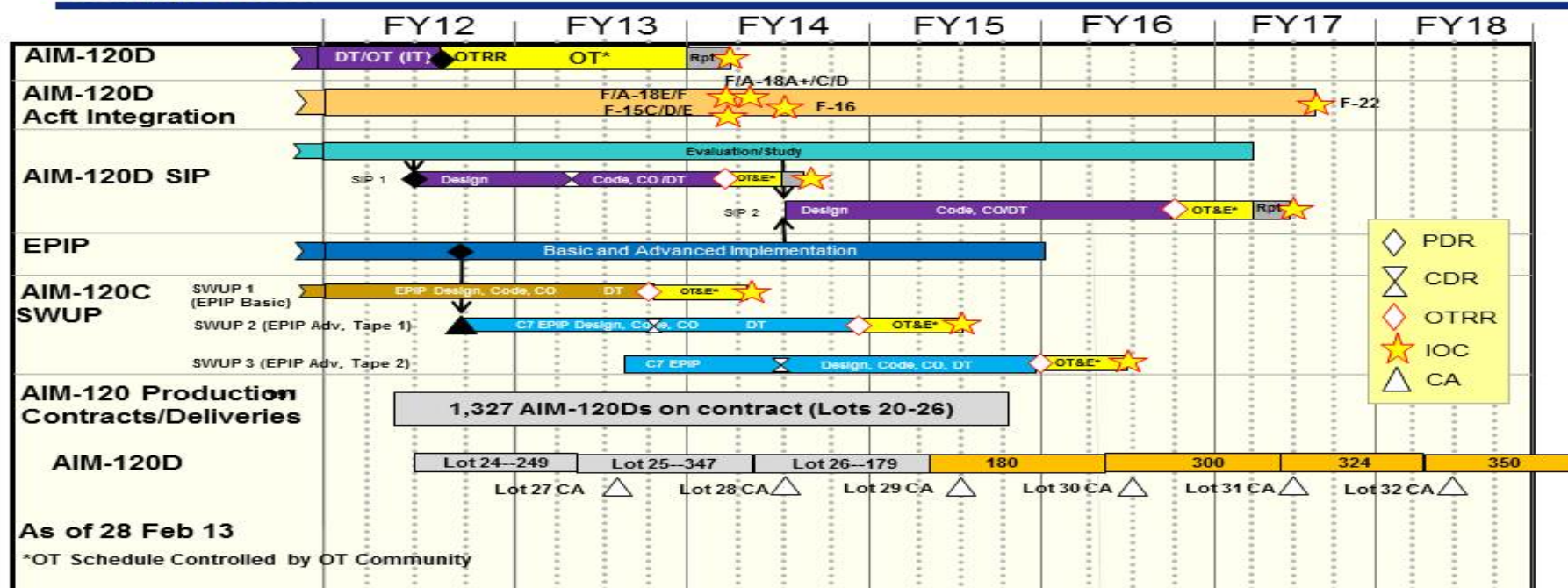
PE 0207163F: Advanced Medium Range
Air-to-Air Missile (AMRAAM)

PROJECT

673777: AMRAAM



AMRAAM Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AIM-120D SIP 1 PDR	3	2012	3	2012
AIM-120D OT	3	2012	1	2014
AIM-120C SWUP (EPIP Adv Tape 1) contract award	4	2012	4	2012
Lot 27 (FY13) contract award	3	2013	3	2013
AIM-120C SWUP (EPIP Adv Tape 1) CDR	4	2013	4	2013
AIM-120C SWUP (EPIP Basic) OT	4	2013	2	2014
AIM-120D SIP 1 OT	1	2014	3	2014
AIM-120D IOC	1	2014	1	2014
AIM-120D SIP 1 IOC	3	2014	3	2014
AIM-120C SWUP (EPIP Adv Tape 2) CDR	3	2014	3	2014