

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0205601N HARM Improvement			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		58.793	51.601	163.371	207.973	160.118	66.684	28.792
A1780 HARM Improvement		3.763	1.991	1.755	3.688	3.696	3.823	3.839
A2185 Adv. Anti-Radiation Guided Missile (AARGM)		46.421	31.188	61.450	74.435	94.176	25.483	
A2211 Joint Common Missile*		7.659	13.749	82.820	117.343	62.246	37.378	24.953
A3056 Direct Attack Guided Rocket (DAGR)/APKWS			4.673	12.504	12.502			
A3057 Common Defense System				4.842	0.005			
A9272 Low Cost High Temp Material		0.950						
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Addds: \$2.8 million in FY 2004 for AARGM accelerated Embedded National Tactical Receiver (ENTR) insertion in SD&D. \$14.7 million in FY 2002 for AARGM risk reduction efforts and producibility enhancements, less Congressional undistributed reductions; \$1.0 million in FY 2003 for Low Cost High Temperature Material for Radome and Antennas, less Congressional undistributed reductions; \$2.8 million in FY 2004 for AARGM accelerated Embedded National Tactical Receiver (ENTR) insertion in SD&D. (U) HIGH-SPEED ANTI-RADIATION (HARM) IMPROVEMENT: The International HARM Upgrade Program (IHUP) (Block IIIB/VI) was a tri-national Precision Navigation Unit (PNU) cooperative program consisting of the development of a USN-unique tactical software upgrade and a hardware upgrade to include an Inertial Measurement Unit (IMU) and a Global Positioning System (GPS) receiver. This upgrade was intended to provide a much improved guidance capability for the current AGM-88B missile (in German and Italian inventories) and AGM-88C missile (in U.S. inventory). Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03. HARM Improvement includes efforts to conduct Foreign Military Exploitation (FME) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates, and integration efforts. (U) <u>ADVANCED ANTI-RADIATION GUIDED MISSILE (AARGM)</u>: AARGM is a Phase III Small Business Innovative Research (SBIR) program designed to develop and demonstrate an advanced multi-mode seeker to the AGM-88 HARM. A2983/Quick Bolt (QB) is an Advanced Concept Technology Demonstration (ACTD) of Joint-suppression of Enemy Air Defense (J SEAD) technology enhancements applicable to AARGM. An AARGM System Development and Demonstration (SD&D) will commence in FY03. The AARGM program plans production of 1,750 missiles (60) Low Rate Initial Production (LRIP) and 1,690 Full Rate Production modification kit(s). *Previously referred to as Modernized Hellfire.								

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<p>(U) JOINT COMMON MISSILE (JCM): Army lead joint service program to replace the aging legacy TOW, Maverick, and Hellfire missiles with a single multi-role weapon, IAW approved Navy, Army and Marine Corps mission needs statement for future multi-role precision guided weapons. The Department of the Navy (DoN) has a Memorandum of Understanding (MOU) with the Army for participation in the development of the Common Missile. Common Missile will provide Line of Sight (LOS), Non-Line of Sight (NLOS), and Beyond Line of Sight (BLOS) capabilities including precision strike with Fire & Forget technologies, increased range, and increased lethality for both Fixed Wing and Rotary Wing Aircraft. Common Missile will maximize the Warfighter's' operational flexibility by allowing them to effectively engage a variety of stationary and mobile targets, including advanced armor, bunkers, buildings, command and control vehicles, transporter/erector launchers and patrol craft.</p> <p>(U) DIRECT ATTACK GUIDED ROCKET (DAGR) The DAGR is an Army ATD to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. DAGR offers the Navy precision, maximum stored kills per aircraft sortie, minimum collateral damage potential, and increased effectiveness over legacy unguided rockets. The guidance package can be assembled with existing unguided rocket components (warhead and rocket motor) and can be fired from existing rocket launchers. DAGR will provide and inexpensive, small, lightweight, precision guided weapon that is effective against soft and lightly armored targets and which enhances crew survivability with increased stand-off range. Army, Marine Corps, and recent Navy ASUW Mission Need Statements highlighted the requirement for a weapon system capable of employment from the SH-60 to counter a swarm threat of small attack boats.</p> <p>(U) COMMON DEFENSE WEAPONS SYSTEM (CDWS): The Department of the Navy has a requirement to replace legacy weapons with an advanced crew served weapon for assault support helicopters. Specific applications include a machine gun to replace M2M and the XM-218.50 caliber machine guns that will provide a significant increase in firepower, accuracy, lethality and reliability, and will maximize survivability through suppressive fire capabilities. Funding will support requirements validation, advance technology demonstration, and prototype development.</p> <p>(U) LOW COST HIGH TEMP MATERIALS: FY 03 Congressional add for design and development of low cost, high temperature materials for radome and antenna use. Funding will support the design and development of six new radome candidate material systems that are (1) safe for production processing, (2) low cost in manufacturing, (3) structurally strong at high temperatures, and (4) compliant with RF transmission requirements compatible with Air-to-Ground Missile Hardware. Congressional add for design and development of low cost, high temperature materials for radome and antenna use. This alternative radome capability will be developed to support AARGM, High-Speed Anti-Radiation (HSAD), and other follow-on AGM-88 configurations.</p>		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement				PROJECT NUMBER AND NAME A1780 HARM Improvement			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		3.763	1.991	1.755	3.688	3.696	3.823	3.839
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The High-speed Anti-Radiation Missile (HARM) is a joint service program with the Air Force (NAVY lead). The program has been in full production since FY 1983. Program Element 0205601N was used until FY 1990 to develop and test one hardware and two software upgrades to the HARM (AGM-88B, Block III & AGM-88C, Block IV) as Engineering Change Proposals (ECPs). Another ECP software program (Block IIIA & V) was recently developed (FY96 through FY99) to modify HARM software in order to meet operational requirements. The Block V tactical software upgrade gives HARM improved geographic specificity and improved capability against advanced waveforms. HARM Block IIIA/V software was distributed to the Fleet in FY00.

The International HARM Upgrade Program (IHUP)/Precision Navigation Unit (PNU) was a tri-national (U.S., Italy, and Germany) cooperative program designed to improve the HARM's effectiveness by enhancing the missile's probability of kill and reducing the potential for fratricide while making the missile easier to employ. The Program consisted of significant hardware and software modifications to the missile's control and guidance sections. The USN frequently referred to the IHUP upgrade as Block IIIB/VI. The HARM Block IIIB/VI program started development in FY98 and was scheduled to commence production in FY03. International participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03. Funding in FY00 through FY03 is dedicated to the HARM Block IIIB/IV program.

HARM Improvement includes efforts to conduct Foreign Military Exploitation (FME) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates, and integration efforts. □

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B. Accomplishments/Planned Program							
			FY 03	FY 04	FY 05		
Accomplishments/Effort/Subtotal Cost			3.763	0.000	0.000		
RDT&E Articles Quantity							
Completes design, development, testing and integration of the IHUP PNU Block IIIB/VI.							
			FY 03	FY 04	FY 05		
Accomplishments/Effort/Subtotal Cost			0.000	1.991	1.755		
RDT&E Articles Quantity							
Conduct Foreign Military Exploitation (FME) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates, and integration efforts.							

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C. PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
Funding:			
Previous President's Budget:	3.807	2.013	1.749
Current BES/President's Budget	3.763	1.991	1.755
Total Adjustments	-0.044	-0.022	0.006
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.022	
Congressional rescissions			
SBIR/STTR Transfer	-0.002		
Economic Assumptions			0.008
Reprogrammings	-0.042		
Congressional increases			
Reprioritizations			-0.002
Subtotal	-0.044	-0.022	0.006

Schedule:

Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03. As a result, the schedule has changed significantly from the previous President's Budget. The only efforts remaining consist of continuing Foreign Military Exploitation.

Technical:

Not Applicable.

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D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	
WPN BLI 203270, HARM MODS	3.880	0	0	0	0			0	3.880	
Related RDT&E: Not applicable.										
E. ACQUISITION STRATEGY: *										
The HARM Block IIIB/VI Upgrade program was an ACAT III Program and consisting of three separate phases (EMD, Production, and Technology Evaluation and Assessment). The acquisition strategy for the HARM Block IIIB/VI Program was complete and was based upon a signed international Memorandum of Agreement with Germany, Italy, and U.S. Navy; a tri-national Cooperative Operational Requirements Document (CORD) , and a Cooperative Test and Evaluation Master Plan (CTEMP) . These three documents drove the overall acquisition approach to the HARM Block VI project. Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03.										
Available resources wil be applied to HARM Legacy configuration requirements.										

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY RD&E, N / BA-7			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A1780 HARM Improvement						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	RSC, Tucson, AZ	18.249	0.824	10/02						19.073	19.073
Aircraft Integration	WX	NAWC WD, China Lake, CA	9.746	1.530	10/02						11.276	
Systems Engineering	WX	NAWC WD, China Lake, CA	2.984	0.625	10/02						3.609	
Subtotal Product Development			30.979	2.979		0.000		0.000		0.000	33.958	
Remarks:												
Integrated Logistics Support	WX	NAWC WD, Point Mugu, CA	1.209	0.435	10/02						1.644	
Studies & Analyses	MIPR	Boeing		0.030	01/03						0.030	
Subtotal Support			1.209	0.465		0.000		0.000		0.000	1.674	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A1780 HARM Improvement						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC WD China Lake, CA	9.006	0.156	02/03						9.162	
Operational Test & Evaluation	WX	NAWC WD China Lake, CA	3.308								3.308	
Operational Test & Evaluation FME	WX	NAWC WD China Lake, CA	0.000	0.135	02/03	1.901	10/03	1.731	10/04	Continuing	Continuing	
Award Fees												
Subtotal T&E			12.314	0.291		1.901		1.731		Continuing	Continuing	
Remarks: <input type="checkbox"/>												
Contractor Engineering Support	RX	Rockwell Collins	2.149	0.000		0.065	12/03	0.015	12/04		2.229	
Program Management Support	WX	NAWCAD, Pax River, MD				0.011	01/04			Continuing	Continuing	
Travel/Transportation	WX	NAWCAD, Pax River, MD	0.337	0.028	10/02	0.014	10/03	0.009	10/04	Continuing	Continuing	
Subtotal Management			2.486	0.028		0.090		0.024		Continuing	Continuing	
Remarks:												
Total Cost			46.988	3.763		1.991		1.755		Continuing	Continuing	
Remarks: Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03.												

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[illegible]

* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-4, Schedule Profile
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Exhibit R-4a, Schedule Detail
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement				PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		46.421	31.188	61.450	74.435	94.176	25.483	0.000
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*Congressional Add: \$2.8 million in FY 2004 for AARGM accelerated Embedded National Tactical Receiver (ENTR) insertion in SD&D.

The Advanced Anti-Radiation Guided Missile (AARGM) , AGM-88E, Project transitioned a Phase III Small Business Innovative Research (SBIR) program to develop and demonstrate a multi-mode guidance section on a HARM airframe to System Development and Demonstration (SD&D) in FY03. The AARGM SD&D program is designed to integrate a Multi-mode (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning system/Inertial Navigation System (GPS/INS)) on the HARM AGM-88 missile. AARGM weapon system capabilities include: counter shutdown, active Millimeter Wave guidance, expanded threat coverage, enhanced anti-radiation homing receiver, netted targeting real-time feed via Integrated Broadcasting Systems (IBS) prior to missile launch, weapon impact assessment transmitted prior to detonation, GPS/point-to-point weapon, and weapon operation in impact avoidance zone/missile impact zones.

The issue of emitter "shut-down" as a defensive tactic has been a major shortcoming in the joint suppression of enemy air defenses (J-SEAD) element of the offensive counter air mission area for the United States Navy and Air Force. Program objectives are to achieve an effective and affordable lethal DEAD (Destruction of Enemy Air Defenses) capability against mobile, relocatable, or fixed air defense threats even in the presence of emitter shutdown or other Anti-Radiation Missile (ARM) countermeasures. The multi-mode technology being integrated in the AARGM program resolves the problem of "shut-down".

The AARGM Advanced Technology Demonstration (ATD) program was an outgrowth of a Phase I and II competitive SBIR program. Phase I and II SBIR efforts successfully demonstrated the feasibility of a multi-mode seeker to address radar "shut-down" issues. Science and Applied Technology (SAT), Inc. was awarded Phase I and II contracts (FY90-93) and was subsequently selected for a Phase III demonstration in FY94. Phase III ATD work was performed by ATK Missile Systems Company (AMSC) (previously SAT) under NAVAIR contract N00019-94-C-0078. This contractual effort resulted in a cumulative contract value of \$194.9M. The AARGM ATD completed in FY 2002; the AARGM Risk Reduction/Producibility Enhancement Effort completed in FY03. At Milestone B, in June 2003, AARGM successfully transitioned to a System Development and Demonstration (SD&D) Acquisition Category 1C (ACAT 1C) program. AMSC was awarded the AARGM SD&D NAVAIR Contract N00019-03-C-0353, valued at \$222.6M. The AARGM program plans to produce 1,750 missiles (75 Low Rate Initial Production (LRIP) missiles and 1,675 Full Rate AGM-88Es).

The AARGM program is the vehicle for the Quick Bolt Advanced Concept Technology Demonstration (ACTD). Quick Bolt adds the ability to receive threat data from national assets, enlarging the target set and increasing aircrew situational awareness, and to transmit a Weapon Impact Assessment (WIA) message to assist in the critical area of Battle Damage Assessment (BDA). The Quick Bolt ACTD was completed in FY03. Quick Bolt demonstration testing successfully used Impact Avoidance Zone (IAZ) logic to distinguish between the proscribed and original target, demonstrating the ability to greatly reduce friendly fire incidents and collateral damage.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 25%;"></th><th style="width: 25%;"></th><th style="width: 20%; text-align: center;">FY 03</th><th style="width: 20%; text-align: center;">FY 04</th><th style="width: 10%; text-align: center;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">21.900</td><td></td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>							FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		21.900			RDT&E Articles Quantity				
		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		21.900																	
RDT&E Articles Quantity																			
<div>Advanced Anti-Radiation Guided Missile (AARGM) Advanced Technology Demonstration (ATD) completion; Risk Reduction/Producibility Enhancement efforts for transitioning into SD&D</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 25%;"></th><th style="width: 25%;"></th><th style="width: 20%; text-align: center;">FY 03</th><th style="width: 20%; text-align: center;">FY 04</th><th style="width: 10%; text-align: center;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">11.114</td><td style="text-align: center;">31.188</td><td style="text-align: center;">61.450</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>							FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		11.114	31.188	61.450	RDT&E Articles Quantity				
		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		11.114	31.188	61.450															
RDT&E Articles Quantity																			
<div>Milestone B System Development and Demonstration (SD&D) activities, and post-Milestone B SD&D efforts. Contractor to update the Advanced Technology Demonstration (ATD)/Advanced Concept Technology Demonstration (ACTD) subsystem designs to the SD&D System Performance Specification and prepare for/conduct System Design Review, Preliminary Design Review, Critical Design Review, Contractor build-up and laboratory and field testing of the AGM-88E seeker. Field activities to support System Engineering, aircraft integration (including Software Configuration Set support), test asset, and test and evaluation requirements analysis, and developmental logistics support. Contractor to perform engineering and technical evaluation services to support program management of AARGM.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 25%;"></th><th style="width: 25%;"></th><th style="width: 20%; text-align: center;">FY 03</th><th style="width: 20%; text-align: center;">FY 04</th><th style="width: 10%; text-align: center;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">13.407</td><td></td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>							FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		13.407			RDT&E Articles Quantity				
		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		13.407																	
RDT&E Articles Quantity																			
<div>Quick Bolt Advanced Concept Technology Demonstration (ACTD) contractor and governmental activities demonstrated the utility of integrating off-board sensor cueing into a new HARM seeker and the utility of providing Weapon Impact Assessment data for BDA cueing. Contractor supported Military Utility Assessment activities including hardware in-the-loop testing, field testing, and missile live firings. Contractor transferred residual ACTD assets to SD&D Contract.</div>																			

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C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget	47.531	28.739	53.553
Current BES/President's Budget	46.421	31.188	61.450
Total Adjustments	-1.110	2.449	7.897
Summary of Adjustments			
Congressional undistributed reductions		-0.351	
Congressional rescissions			
SBIR/STTR Transfer	-0.973		
Economic Assumptions			-0.072
Reprogrammings	-0.137		7.969
Reprogrammings			
Congressional increases		2.800	
Subtotal	-1.110	2.449	7.897

Schedule:

To support Milestone C in 2QFY08, the Operational Assessment (OA) has been added to 4QFY07. Operational Testing (OTC) has been shifted to 3QFY08 to allow for Developmental Test (DT) completion before commencement of OTC. Completion of Low Rate Initial Production (LRIP) I and Initial Operational Capability (IOC) has been accelerated to 4QFY09 per the funding adjustments.

Technical:

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D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
P-1 Proc. Line Item No. 232700, HARM MODS	0	0	0	0	0	40.545	42.546	889.809	972.900

E. ACQUISITION STRATEGY:

The AARGM program started as a Phase I Small Business Innovative Research (SBIR), Advanced Technology Program (ATD), evolved into a Phase III SBIR program, and transitioned into a System Development and Demonstration (SD&D) ACAT 1C program in June 2003. The AARGM SD&D will fulfill U.S. Navy operational requirements and incorporates AARGM system requirements. Government responsibilities for both the ATD and SD&D include monitoring, technical assessment and validation of contractor technology development and testing.

The Quick Bolt Advanced Concept Technology Demonstration (ACTD) was completed in FY03 and transitioned into the AARGM SD&D.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF	SAT, Woodland Hills, CA	98.562	0.000		0.000		0.000		0.000	98.562	98.562
Primary Hardware Dev. - Risk Red.	CPFF	SAT, Woodland Hills, CA	52.305	14.000	11/02	0.000		0.000		0.000	66.305	66.305
Primary Hardware Dev. - Quick Bolt	CPFF	SAT, Woodland Hills, CA	4.700	12.634	10/02	0.000		0.000		0.000	17.334	17.334
Primary Hardware Dev. - SD&D	CPIF	ATK, Woodland Hills, CA	0.000	3.346	06/03	25.949	12/03	44.884	12/04	148.436	222.615	222.615
Aircraft Integration	WX	NAWC WD, China Lake	0.122	2.613	10/02	0.488	10/03	2.000	10/04	2.200	7.423	
Systems Engineering	WX	NAWC WD, China Lake	15.611	4.200	10/02	2.831	10/03	8.437	10/04	21.164	52.243	
Systems Engineering	WX	JHU/APL, MD	0.615	0.000							0.615	
Primary Hardware Dev. - Risk Red.	CPFF	ATK, San Diego, CA	0.000	7.000	04/03						7.000	7.000
Subtotal Product Development			171.915	43.793		29.268		55.321		171.800	472.097	
Remarks:												
Integrated Logistics Support	Var	Various		0.050	02/03	0.200	10/03	0.309	10/04	1.022	1.581	
Studies & Analyses	Var	Various		0.027	10/02	0.027	10/03	0.028	10/04	0.090	0.172	
Subtotal Support			0.000	0.077		0.227		0.337		1.112	1.753	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 15 of 42)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE, N / BA-7			0205601N HARM Improvement			A2185 Advanced Anti-Radiation Guided Missile (AARGM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC WD, CHINA LAKE		1.200	10/02	0.893	10/03	2.000	10/04	11.702	15.795	
Operational Test & Evaluation	WX	NAWC WD, CHINA LAKE								3.248	3.248	
Test Assets	WX	Assorted						2.750	10/04	2.250	5.000	
Subtotal T&E			0.000	1.200		0.893		4.750		17.200	24.043	
Remarks:												
Contractor Engineering Support	RX	DCS Corp, Alexandria, VA	3.236	1.311	10/02	0.720	11/03	0.942	11/04	3.476	9.685	
Travel	WX	NAWC AD, Patuxent MD	0.375	0.040	10/02	0.080	10/03	0.100	10/04	0.507	1.102	
Subtotal Management			3.611	1.351		0.800		1.042		3.983	10.787	
Remarks:												
Total Cost			175.526	46.421		31.188		61.450		194.094	508.679	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 16 of 42)

R-1 SHOPPING LIST - Item No. 175

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 17 of 42)R-1 SHOPPING LIST - Item No. 175

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 175

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 18 of 42)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement				PROJECT NUMBER AND NAME A2211 Joint Common Missile*			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		7.659	13.749	82.820	117.343	62.246	37.378	24.953
RDT&E Articles Qty				34	67	65	23	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*Previously referred to as JAWS/Modernized HELLFIRE

(U) Joint Common Missile (JCM): Army lead joint service program to replace the aging legacy TOW, Maverick, and Hellfire missiles with a single multi-role weapon, IAW approved Navy, Army and Marine Corps Initial Capabilities Document (ICD) for future multi-role precision guided weapons. The Department of the Navy (DoN) has a Memorandum of Understanding (MOU) with the Army for participation in the development of the Joint Common Missile. Joint Common Missile will provide Line of Sight (LOS), Non-Line of Sight (NLOS), and Beyond Line of Sight (BLOS) capabilities including precision strike with Fire & Forget technologies, increased range, and increased lethality for both Fixed Wing and Rotary Wing Aircraft. Joint Common Missile will maximize the Warfighter's operational flexibility by allowing them to effectively engage a variety of stationary and mobile targets including: advanced armor, bunkers, buildings, command and control vehicles, transporter/erector launchers and patrol craft.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA - 7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A2211 Joint Common Missile																	
B. Accomplishments/Planned Program																			
<table border="1"><thead><tr><th></th><th></th><th>FY 03</th><th>FY 04</th><th>FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>7.659</td><td>6.480</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>							FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		7.659	6.480		RDT&E Articles Quantity				
		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		7.659	6.480																
RDT&E Articles Quantity																			
<p>Continued participation with the Army in Joint Common Missile Risk Reduction/Producibility Enhancement efforts for transitioning into SD&D. Development of seeker, propulsion and Warhead technologies for Navy and Marine Corps Fixed and Rotary Wing peculiar requirements (including shipboard operability and suitability); Systems engineering, including development of component technical solutions using SMART (simulation and modeling for acquisition, requirements and training). Risk reduction engineering on multi-mode seekers (Dual/Tri-Mode), advanced warheads, and variable thrust propulsion.</p>																			
<table border="1"><thead><tr><th></th><th></th><th></th><th>FY 04</th><th>FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td></td><td>7.269</td><td>82.820</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td>34</td></tr></tbody></table>								FY 04	FY 05	Accomplishments/Effort/Subtotal Cost			7.269	82.820	RDT&E Articles Quantity				34
			FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost			7.269	82.820															
RDT&E Articles Quantity				34															
<p>Continue participation with the Army in Joint Common Missile Milestone B System Development and Demonstration (SD&D) activities, and post-Milestone B SD&D efforts. Contractor to update the SD&D subsystem designs to the SD&D System Performance Specification and prepare for/conduct System Design Review, Preliminary Design Review, Critical Design Review, and Design Readiness Reviews. Contractor to conduct risk mitigation efforts and complete the design, development, fabrication, test, and qualification of a single configuration Joint Common Missile.</p> <p>Field activities to support System Engineering, aircraft integration (including Software Configuration Set support), test asset, and test and evaluation requirements analysis, and developmental logistics support. Platform integration will be conducted on AH-1Z, F/A-18 E/F, and MH-60R.</p>																			

R-1 SHOPPING LIST - Item No.

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 20 of 42)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004																																																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	A2211 Joint Common Missile																																																								
C. PROGRAM CHANGE SUMMARY: <table style="width: 100%; border-collapse: collapse;"><thead><tr><th style="text-align: left; width: 40%;">Funding:</th><th style="text-align: right; width: 15%;">FY 2003</th><th style="text-align: right; width: 15%;">FY 2004</th><th style="text-align: right; width: 15%;">FY 2005</th></tr></thead><tbody><tr><td>Previous President's Budget:</td><td style="text-align: right;">7.950</td><td style="text-align: right;">13.904</td><td style="text-align: right;">59.614</td></tr><tr><td>Current BES/President's Budget</td><td style="text-align: right;">7.659</td><td style="text-align: right;">13.749</td><td style="text-align: right;">82.820</td></tr><tr><td>Total Adjustments</td><td style="text-align: right; border-top: 1px solid black;">-0.291</td><td style="text-align: right; border-top: 1px solid black;">-0.155</td><td style="text-align: right; border-top: 1px solid black;">23.206</td></tr><tr><td colspan="4" style="padding-top: 10px;">Summary of Adjustments</td></tr><tr><td> Congressional program reductions</td><td></td><td></td><td></td></tr><tr><td> Congressional undistributed reductions</td><td></td><td style="text-align: right;">-0.155</td><td></td></tr><tr><td> Congressional rescissions</td><td></td><td></td><td></td></tr><tr><td> SBIR/STTR Transfer</td><td style="text-align: right;">-0.207</td><td></td><td></td></tr><tr><td> Economic Assumptions</td><td></td><td></td><td style="text-align: right;">-0.106</td></tr><tr><td> Reprogrammings</td><td style="text-align: right;">-0.084</td><td></td><td></td></tr><tr><td> Congressional increases</td><td></td><td></td><td></td></tr><tr><td> Sponsor/FMB/NAVAIR Adjustments</td><td></td><td></td><td style="text-align: right;">23.312</td></tr><tr><td> Subtotal</td><td style="text-align: right; border-top: 1px solid black;">-0.291</td><td style="text-align: right; border-top: 1px solid black;">-0.155</td><td style="text-align: right; border-top: 1px solid black;">23.206</td></tr></tbody></table> <p>Schedule:</p> <p style="margin-left: 20px;">The Joint Common Missile program has a slightly revised plan and has shifted to the right 6 months due to JROC's direction to convert the Operational Requirements Document (ORD) to the new Capability Development Document (CDD).</p> <p>Technical:</p> <p style="margin-left: 20px;">Not Applicable</p>			Funding:	FY 2003	FY 2004	FY 2005	Previous President's Budget:	7.950	13.904	59.614	Current BES/President's Budget	7.659	13.749	82.820	Total Adjustments	-0.291	-0.155	23.206	Summary of Adjustments				Congressional program reductions				Congressional undistributed reductions		-0.155		Congressional rescissions				SBIR/STTR Transfer	-0.207			Economic Assumptions			-0.106	Reprogrammings	-0.084			Congressional increases				Sponsor/FMB/NAVAIR Adjustments			23.312	Subtotal	-0.291	-0.155	23.206
Funding:	FY 2003	FY 2004	FY 2005																																																							
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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 21 of 42)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A2211 Joint Common Missile				
D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
P-1 Proc, Line Item No. 225400 (\$M) Joint Common Missile					0.8	23.4	46.9		71.100
RDT&E ARMY P.E. 0604329A Proj 013 JCM	28.602	94.7	153.8	148.3	84.7	67.7	57.7	148	783.502
WPN ARMY C70302/APE					6.2	71.6	102.4	TBD	180.200
 E. ACQUISITION STRATEGY:									
<p>The JCM program was initiated under the provisions of streamlined acquisition principles, and therefore, the first major milestone review will be Milestone B. The J-8, Force Structure, Resources, and Assessment Directorate, HQDA, and the Chairman of the Overarching Integrated Product Team (OIPT) are working to support a schedule of March 2004 for Milestone B; the JCM program entering SDD at the system integration level, where the Army is responsible for risk mitigation and the design, development, fabrication, testing, and qualification of the JCM system. The SD&D and Low Rate Initial Production (LRIP) contractor will be selected through a limited competition with contract award scheduled closely following a successful Milestone B. Though JCM is Army lead, Department of the Navy (DON) pays: Navy unique costs; Navy test assets; and platform integration & testing for AH-1, H-60, and F/A-18.</p>									

R-1 SHOPPING LIST - Item No. 175

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A2211 Joint Common Missile						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	AAMCOM, Huntsville, AL		1.870	11/02	0.859	11/03	9.397	11/04	Continuing	Continuing	
Ancillary Hardware Development	MIPR	AAMCOM Huntsville, AL				1.610	02/04	1.581	11/04	Continuing	Continuing	
Aircraft Integration	WX	Orlando, TSD		0.300	11/02	0.620	11/03	0.553	11/04	Continuing	Continuing	
Ship Integration	WX	NAWCAD/WD						8.390	11/04	Continuing	Continuing	
											0.000	
Systems Engineering	WX	NAWCAD/WD	1.232	2.938	10/02	3.701	11/03	3.750	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Award Fees	MIPR	AAMCOM Huntsville, AL				0.050	02/04	3.000	11/04	Continuing	Continuing	
Subtotal Product Development			1.232	5.108		6.840		26.671		Continuing	Continuing	
Remarks:												
Development Support	WX	NAWCAD/WD	1.374			0.575	11/03	0.319	11/04	Continuing	Continuing	
Software Development	WX	NAWCAD/WD				2.108	11/03	15.129	11/04	Continuing	Continuing	
Integrated Logistics Support	WX	NAWCAD/WD				0.343	11/03	0.390	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			1.374	0.000		3.026		15.838		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A2211 Joint Common Missile						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD/WX	0.185	1.000	11/02	2.476	05/04	7.055	11/04	Continuing	Continuing	
											0.000	
											0.000	
Test Assets	MIPR	AAMCOM Huntsville				0.198	02/04	31.490	11/04	Continuing	Continuing	
Tooling	MIPR/TB	NAWCWD/Contractor		0.500	11/02						0.500	
											0.000	
											0.000	
Subtotal T&E			0.185	1.500		2.674		38.545		Continuing	Continuing	
Remarks:												
											0.000	
Government Engineering Support	WX	NAWCAD/WD	1.912	0.500	01/03	0.514	01/04	0.830	11/04	Continuing	Continuing	
Program Management Support	WX	NAWCAD/WD		0.501	11/02	0.620	01/04	0.841	11/04	Continuing	Continuing	
Travel	WX	NAVAIR/AAMCOM, Huntsville, A	0.125	0.050	10/02	0.075	01/04	0.095	10/04	Continuing	Continuing	
											0.000	
SBIR Assessment			0.039							Continuing	Continuing	
Subtotal Management			2.076	1.051		1.209		1.766		Continuing	Continuing	
Remarks:												
Total Cost			4.867	7.659		13.749		82.820		Continuing	Continuing	
Remarks:												

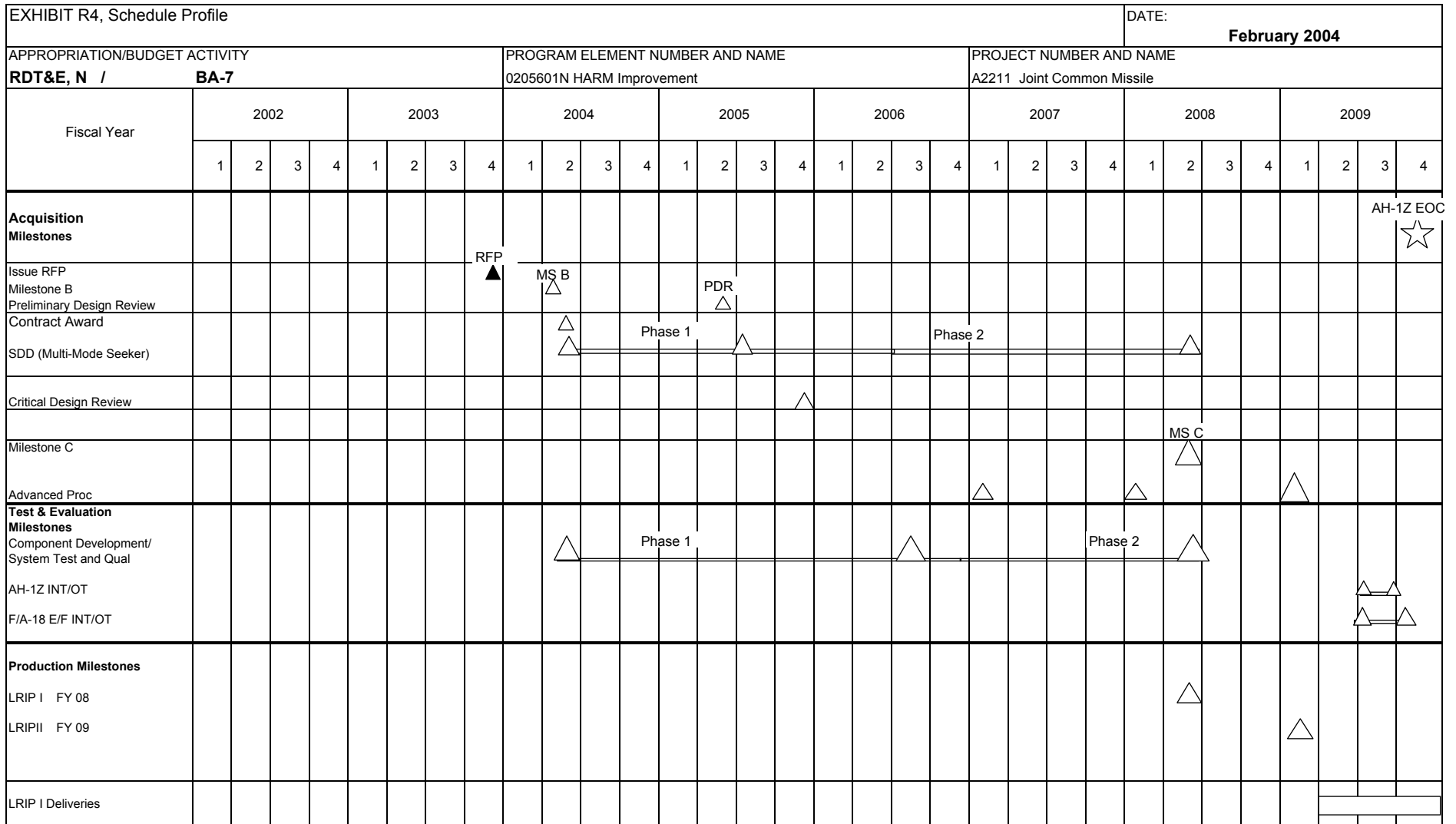
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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 24 of 42)

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* Not required for Budget Activities 1, 2, 3, and 6

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R-1 SHOPPING LIST - Item No. 175

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 26 of 42)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement				PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (APKWS)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			4.673	12.504	12.502			
RDT&E Articles Qty			6	12	25			

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Advanced Precision Kill Weapon System (APKWS) is an Army led SDD program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. DON participation began in FY04. APKWS will provide an inexpensive, small, lightweight, precision guided weapon that is effective against soft and lightly armored targets and which enhances crew survivability with increased stand-off range. APKWS offers precision, maximum stored kills per aircraft sortie, minimum collateral damage potential, and increased effectiveness over legacy unguided rockets. The guidance package can be assembled with existing unguided rocket components. The Navy is developing a digital launcher to maximize the effectiveness of the APKWS.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA - 7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (APKWS)														
B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"><tr><td style="width: 30%;"></td><td style="width: 30%; text-align: center;">FY 03</td><td style="width: 30%; text-align: center;">FY 04</td><td style="width: 30%; text-align: center;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">4.673</td><td style="text-align: center;">12.504</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></table> <div style="border: 1px solid black; padding: 10px; min-height: 300px;"><p>FY04 - 05 Advanced Precision Kill Weapon System (APKWS) funding supports the Navy participation in SD&D with the Army. The Army is the program lead. The program will develop, test and qualify a laser guided 2.75-inch munitions for initial integration on Marine Corps rotary wing aviation. Funding will ensure Navy requirements are incorporated in the System Development and Demonstration contract. Participated with the Army to validate the Operational Requirements Document (ORD) and in Milestone B decision. FY04 component development, DT testing and technical analysis.</p></div>						FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		4.673	12.504	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05													
Accomplishments/Effort/Subtotal Cost		4.673	12.504													
RDT&E Articles Quantity																

R-1 SHOPPING LIST - Item No.

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 28 of 42)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (APKWS)

C. PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
Funding:			
Previous President's Budget:		4.725	12.536
Current BES/President's Budget		4.673	12.504
Total Adjustments	0.000	-0.052	-0.032
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.052	
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			-0.027
Reprogrammings			
Congressional increases			
Reprioritizations			-0.005
Subtotal		-0.052	-0.032

Schedule:

Not Applicable.

Technical:

Not Applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement		PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (APKWS)					
D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PANMC - (BLI 015100) Airborne Rockets, All Types *				3.5	7.0	10.5			
Related RDT&E: U. S. Army P.E. 0604802A PROJ D705 Advanced Precision Weapon System	19.88	42.112	9.008	5.597	4.605			TBD	
Related WPN: U. S. Army P.E. 0203802A PROJ D786			5.013	10.05	8.986	23.726	22.551	TBD	
* Planned procurement strategy for the APKWS 2.75-inch guidance sections within the current Airborne Rockets, All Types PANMC funding profile									
E. ACQUISITION STRATEGY:									
- Department of Army (DOA) ACAT II program. Entered SDD in 2nd qtr FY03. DON acquisition strategy is to contract unique requiremetns & Test Assets with the DOA. Platform integrtation is on AH-1W.									

R-1 SHOPPING LIST - Item No. 175

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A3056 Advanced Precision Kill Weapon System (APKWS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MP	AMCOM, Huntsville				0.505	02/04	3.800	10/04	0.650	4.955	
Ancillary Hardware Development	WX	NAWCAD						1.850	10/04	0.000	1.850	
Aircraft Integration	WX	NAWCWD				0.200	02/04	0.650	11/04	0.550	1.400	
											0.000	
											0.000	
Systems Engineering	WX	NSWC Indian Head						0.444	11/04	0.653	1.097	
											0.000	
Training Development	WX	NSWC Indian Head						0.145	11/04	0.345	0.490	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.705		6.889		2.198	9.792	
Remarks:												
											0.000	
											0.000	
Integrated Logistics Support	WX	NSWC, Indian Head						0.300	11/04	0.400	0.700	
Configuration Management	WX	NSWC, Indian Head						0.096	11/04	0.135	0.231	
Technical Data	WX	NSWC, Indian Head						0.140	11/04	0.100	0.240	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.536		0.635	1.171	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (APKWS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC AD/WD				0.923	02/04	1.455	11/04	1.200	3.578	
Operational Test & Evaluation	WX	NAWC AD/WD								4.493	4.493	
											0.000	
Test Assets	MP	AMCOM, Huntsville				1.895	02/04	1.450	10/04	1.260	4.605	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		2.818		2.905		6.953	12.676	
Remarks:												
								0.000		0.000	0.000	
Government Engineering Support	WX	NAWCAD/WD				0.755	10/03	1.650	10/04	2.020	4.425	
Program Management Support	WX	NSWC, Indian Head				0.329	10/03	0.400	10/04	0.528	1.257	
Travel	WX	NSWC/NAWCAD/WD				0.066	10/03	0.124	10/04	0.168	0.358	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		1.150		2.174		2.716	6.040	
Remarks:												
Total Cost			0.000	0.000		4.673		12.504		12.502	29.679	
Remarks:												

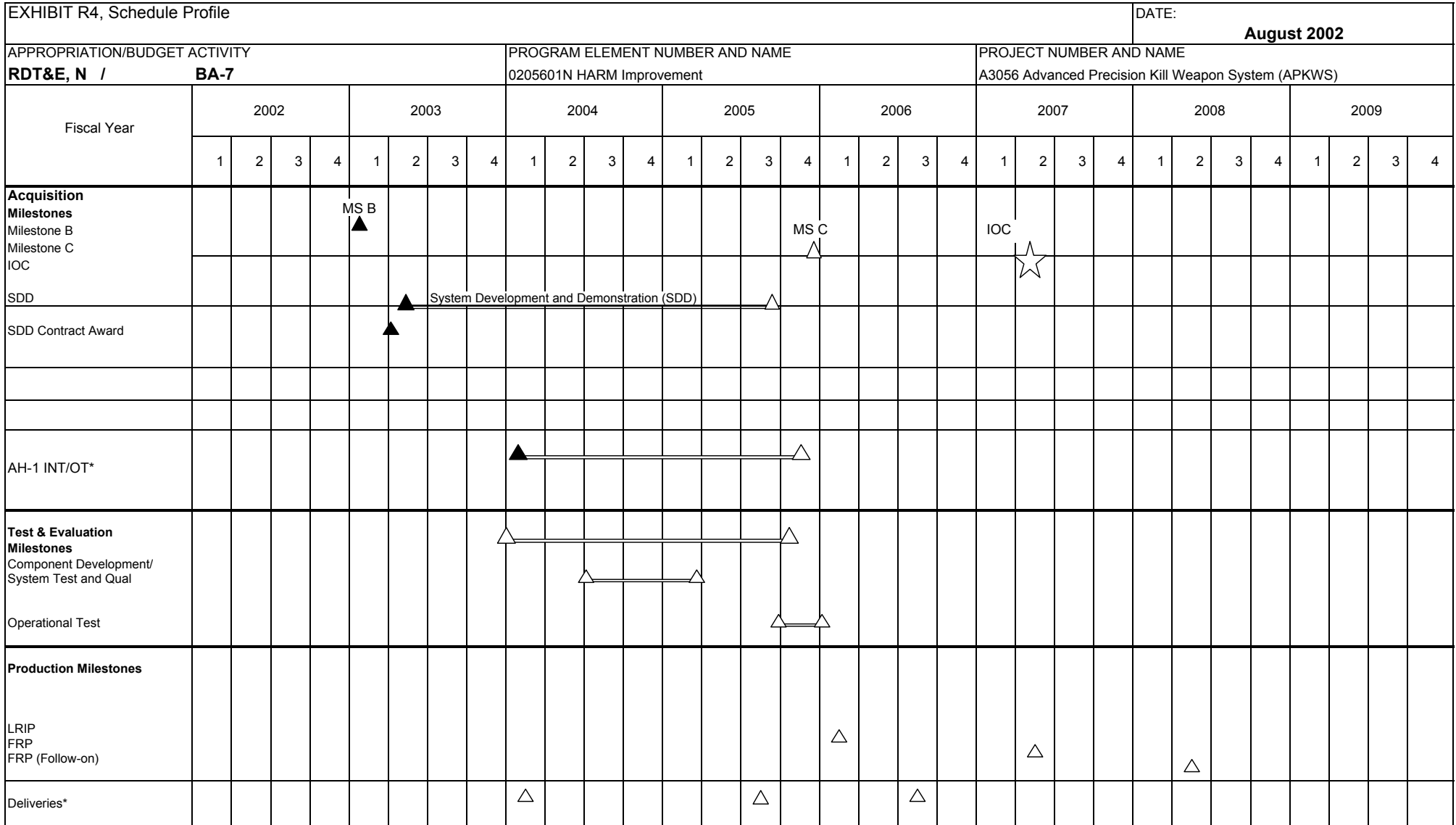
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Exhibit R-3, Project Cost Analysis
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* Navy only milestones. All remaining are Department of Army (DOA)

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Exhibit R-4, Schedule Profile
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[illegible]

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 34 of 42)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement				PROJECT NUMBER AND NAME A3057 Common Defense Weapons System			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost				4.842				
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Department of the Navy has a requirement to replace legacy M2M and XM-218 .50 caliber machine guns with an advanced crew served weapon for assault and support helicopters. Specific applications will provide a significant increase in firepower, accuracy, lethality and reliability, and will maximize survivability through suppressive fire capabilities. Funding will support requirements validation, advance technology demonstration, and hardware development.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA - 7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3057 Common Defense Weapons System		
B. Accomplishments/Planned Program				
		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				4.842
RDT&E Articles Quantity				
<p>Funding will support requirements validation, advance technology demonstration, and hardware development, including integration and system qualification efforts on the H1/H46/CH-53D/H-60/V-22 helicopters.</p>				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3057 Common Defense Weapons System

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	4.838
Current BES/President's Budget	0.000	0.000	4.842
Total Adjustments	0.000	0.000	0.004
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			0.004
Reprogrammings			
Congressional increases			
Reprioritizations			
Subtotal	0.000	0.000	0.004

Schedule:

Not Applicable.

Technical:

Not Applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A3057 Common Defense Weapons System				
D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-5, P-1 Proc. Line Item No. 052800, M3M .50 Cal ATAV	5.862	5.89	0	0	0	0	0		
APN -5, P-1 Proc. Line Item No. 058100	0	0	0	13.752	13.744	0	0		
E. ACQUISITION STRATEGY:									
<p>This is a recurring Assault Support OAG action item for all platforms. Funding supports the replacement of WWII era .50 caliber machine guns currently in fleet use across all USMC helicopter platforms. Proposed replacement will offer enhanced reliability, safety, increased operational effectiveness, reduced life cycle costs, and commonality across all support platforms. Required funding would support outfit of all fleet helicopters to the new configuration which include greater ammunition capacity and a soft mount system to reduce airframe fatigue. □</p>									

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0205601N HARM Improvement				A3057 Common Defense Weapons System					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	PID	FN Herstal (Belgium)						2.000	10/04		2.000	
Training Development	WX	NAVAIR						0.075	10/04		0.075	
Aircraft Integration	WX	NAWCAD/WD						1.283	10/04		1.283	
Systems Engineering	WX	NAWCAD/NAWCWD						0.140	10/04		0.140	
Subtotal Product Development								3.498			3.498	
Remarks:												
Development Support	WX	NAWCAD/NAWCWD						0.140	10/04		0.140	
Integrated Logistics Support	WX	NAWCWD						0.074	10/04		0.074	
Configuration Management	WX	NAWCWD						0.025	10/04		0.025	
Technical Data	WX	NAWCWD						0.025	10/04		0.025	
Studies & Analyses	WX	NAVAIR						0.075	10/04		0.075	
Subtotal Support								0.339			0.339	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A3057 Common Defense Weapons System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD/WD						0.400	10/04		0.400	
Operational Test & Evaluation	WX	NAWCAD/WD						0.194	10/04		0.194	
Test Assets	TBD	TBD						0.100	10/04		0.100	
Subtotal T&E								0.694			0.694	
Remarks:												
Government Engineering Support	TBD	TBD						0.145	10/04		0.145	
Program Management Support	TBD	TBD						0.146	10/04		0.146	
Travel	TBD	TBD						0.020	10/04		0.020	
Subtotal Management								0.311			0.311	
Remarks:												
Total Cost								4.842			4.842	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:								
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME								
RDT&E, N / BA-7												0205601N HARM Improvement												A3057 Common Defense Weapons System (CDWS)								
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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				
Acquisition Milestones																																
Contract Award Advanced Technology Development & Hardware Development																																
H-1/H-46/CH-53D/H-60/V-22 Integration																																
Test & Evaluation Milestones																																
System Qualification testing																																

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* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-4, Schedule Profile
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Exhibit R-4a, Schedule Detail
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