

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement							
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	731.698	12.586	13.586	17.420	-	17.420	6.982	6.127	6.173	6.314	Continuing	Continuing
1780: HARM Improvement	45.058	1.254	1.339	1.343	-	1.343	1.392	1.435	1.432	1.460	Continuing	Continuing
2185: AARGM	656.873	8.236	12.247	16.077	-	16.077	5.590	4.692	4.741	4.854	7.615	720.925
3212: MEDUSA JCTD	29.767	3.096	-	-	-	-	-	-	-	-	-	32.863
MDAP/MAIS Code: 368												
# The FY 2015 OCO Request will be submitted at a later date.												
Note A new Program Element (PE), 0605555N, has been established for the Direct and Time Sensitive Strike Program Office to support research, development, test and evaluation of Strike Weapons to be employed from a multitude of fixed and rotary wing aircraft in support of offensive and defensive land and sea based targets across multiple mission areas. The following projects have been realigned/transferred to this new PE beginning in FY 2014: 3212 - MEDUSA Joint Capability Technology Demonstration (JCTD) and 3412 - Hellfire-Romeo (Hellfire-R) Integration. The Cost to Complete on Exhibits R-2 and R-2a should be \$7.615M.												
A. Mission Description and Budget Item Justification Research, Development, Test and Evaluation funding for the Joint Service Anti-Radiation Missile (ARM) program, which will include near and far term performance improvements, cost reduction, and studies that establish future development requirements. Specific initial efforts include lower cost seeker component development and seeker aided fuzing to enhance warhead performance in low angle impacts and against certain ship targets. These projects are funded under Operational Systems Development because they include development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate funding in the current or subsequent fiscal year.												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy				Date: March 2014	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement			
B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	11.477	13.586	8.108	-	8.108
Current President's Budget	12.586	13.586	17.420	-	17.420
Total Adjustments	1.109	-	9.312	-	9.312
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.099	-			
• SBIR/STTR Transfer	-0.016	-			
• Rate/Misc Adjustments	-	-	9.312	-	9.312
• Congressional General Reductions Adjustments	-0.974	-	-	-	-
Change Summary Explanation					
Technical: FY15 funding increase due to additional funding required to complete follow-on test and evaluation requiremetns for AARGM Block 1.					
Schedule:					
AARGM, project 2185, experienced a delay in block 1 completion due to funding deferrals and target availability, which then led to a slip in Follow-on Operational Test and Evaluation.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement				Project (Number/Name) 1780 / HARM Improvement			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
1780: HARM Improvement	45.058	1.254	1.339	1.343	-	1.343	1.392	1.435	1.432	1.460	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		
# The FY 2015 OCO Request will be submitted at a later date.												
A. Mission Description and Budget Item Justification												
High-speed Anti-Radiation Missile (HARM) Improvement is a Navy led joint service program with the Air Force. The program commenced production in FY 1983. Program element 0205601N was used until FY 1990 to develop and test one hardware and two software upgrades to the HARM (air-to-ground (AGM)-88B, Block 3 & AGM-88C, Block 4) as Engineering Change Proposals (ECPs). Another ECP software program (Block 3A & 5) was developed (FY 1996 through FY 1999) to modify HARM software in order to meet operational requirements. HARM Block 3A/5 software was distributed to the Fleet in FY 2000. The Block 5 tactical software upgrade gives HARM improved geographic specificity and improved capability against advanced waveforms. HARM Block 5A is currently being deployed in the Fleet.												
HARM Improvement includes efforts to conduct Foreign Military Assessment (FMA) analysis and engineering to exploit vulnerabilities of foreign weapon system threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2013	FY 2014	FY 2015	
Title: HARM Foreign Military Assessment (FMA) Articles:									1.254	1.339	1.343	
									-	-	-	
FY 2013 Accomplishments: Continued to conduct FMA analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.												
FY 2014 Plans: The FMA team will continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign weapon system threats. Focus will be on new threat systems as they become available as well as theater/country-specific systems of interest, with priorities coordinated through the Anti-Radiation Missile (ARM) Steering Committee (ASC). Expect continued testing on advanced Surface-to-Air weapons and related integrated air defense systems (IADS), jammers and ARM countermeasures, and non-traditional ARM targets. One specific area of attention will be expanding collection, analysis, and definition of radar parametric related to HARM 5A improvements, with feedback from full Fleet fielding in 2013. Team will continue to support Fleet engagement as a key element of engineering and analytical efforts, which includes funding for threat assessment, operational updates and integration efforts.												
FY 2015 Plans: The FMA team will continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign weapon system threats. Focus will be on new threat systems as they become available as well as theater/country-specific systems of interest, with												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014	
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>	Project (Number/Name) 1780 / <i>HARM Improvement</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014
<p>priorities coordinated through the ARM ASC. Expect continued testing on advanced Surface-to-Air weapons and related IADS, jammers and ARM countermeasures, and non-traditional ARM targets. One specific area of attention will be expanding collection, analysis, and definition of radar parametric related to HARM 5A improvements, with feedback from full Fleet fielding in 2014. Team will continue to support Fleet engagement as a key element of engineering and analytical efforts, which includes funding for threat assessment, operational updates and integration efforts.</p>			
Accomplishments/Planned Programs Subtotals		1.254	1.339
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
HARM software updates are provided through the Software Support Activity (SSA) at Naval Air Warfare Center - Weapons Division (NAWC-WD), China Lake, CA.			
E. Performance Metrics			
Successfully complete Developmental Test/Operational Test.			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy												Date: March 2014			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement				Project (Number/Name) 1780 / HARM Improvement					
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD : China Lake, CA	1.398	1.078	Nov 2012	1.337	Nov 2013	1.341	Nov 2014	-		1.341	Continuing	Continuing	Continuing
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	24.732	-		-		-		-		-	-	24.732	-
Subtotal			26.130	1.078		1.337		1.341		-		1.341	-	-	-
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Eval	WR	NAWC-WD : China Lake, CA	18.527	0.174	Nov 2012	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			18.527	0.174		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	Various : Various	0.401	0.002	Nov 2012	0.002	Jan 2014	0.002	Jan 2015	-		0.002	Continuing	Continuing	Continuing
Subtotal			0.401	0.002		0.002		0.002		-		0.002	-	-	-
Remarks Contract Type for Travel is TO															
			Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			45.058	1.254		1.339		1.343		-		1.343	-	-	-
Remarks															

UNCLASSIFIED

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

Date: March 2014

Appropriation/Budget Activity

1319 / 7

R-1 Program Element (Number/Name)

PE 0205601N / Harm Improvement

Project (Number/Name)

1780 / HARM Improvement

[illegible]

2015PB - 0205601N - 1780

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>	Project (Number/Name) 1780 / <i>HARM Improvement</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>HARM IMPROVEMENT</i>				
Acquisition Milestones: Radar System Evaluation: Radar System Evaluation - Foreign Military Assessment	1	2013	4	2019
Test & Evaluation: Lazer Guided Zuni (LGZ)	1	2013	2	2013

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>				Project (Number/Name) 2185 / AARGM			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2185: AARGM	656.873	8.236	12.247	16.077	-	16.077	5.590	4.692	4.741	4.854	7.615	720.925
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

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

A. Mission Description and Budget Item Justification

Advanced Anti-Radiation Guided Missile (AARGM) 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 FY 2003. The AARGM SD&D program was designed to integrate multi-mode guidance (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning System (GPS)/Inertial Navigation System) on the HARM Air-to-Ground Missile (AGM)-88. AARGM weapon system capabilities include: active MMW terminal guidance, counter shutdown, expanded threat coverage, enhanced ARH, netted targeting real-time feed via Integrated Broadcast System (IBS) prior to missile launch, Weapon Impact Assessment (WIA) transmitted prior to detonation, GPS/point-to-point weapon navigation, and weapon employment with impact avoidance zone/missile impact zones.

In June 2003, a successful Milestone B transitioned AARGM to a SD&D Acquisition Category 1C program. Alliant Techsystems (ATK) Missile Systems Company was awarded the AARGM SD&D contract valued at \$222.6M. In May 2004, the contract baseline was increased to \$231.9M to accelerate incorporation of an embedded IBS-Receiver, enabling the warfighter to directly receive National intelligence data, increasing overall pilot situational awareness. Recent modifications have changed the current baseline to \$232.3M.

The AARGM program includes 40 SD&D test articles with the follow on of 1,879 production modification kits. Milestone C was achieved 4Q FY 2008, followed by a combined FY 2008/FY 2009 Low Rate Initial Production (LRIP) contract award in 1Q FY 2009. Developmental testing was completed in 2009. Initial Operational Test and Evaluation (IOT&E) was completed in 3Q FY 2012. LRIP III contract was awarded 1Q FY 2012, and deliveries have begun 1Q FY 2013. Full-Rate Production (FRP) decision was received 20 August 2012 with FRP contract award on 10 September 2012, and deliveries have begun in January 2014.

The AARGM Block 1 Upgrade program began in FY 2012 and consists of improvements and enhancements through software changes, which will enable the AGM-88E AUR, as well as the Common Munitions Built-in Test (BIT) Reprogramming Equipment (CMBRE) box 4 and 5 to correct IOT&E deficiencies and complete Capability Production Document requirements. Block 1 will improve counter measure identification, and will complete development of Target of Opportunity, Millimeter Wave (MMW), IBS-R capabilities, Navigation, and Weapons Impact Assessment (WIA) messages. In parallel with the Block 1 Upgrade, efforts to complete the development of Phase III equipment (Integrated Broadcast Service (IBS)-R/Embedded Network Tactical Receiver (ENTR) and IBS-R/ENTR antenna) are ongoing.

Follow-on Operational Test and Evaluation/Integrated Test/Operational Test - Development (FOT&E/IT/OT-D) in conjunction with Block 1 Upgrade will complete tactics development and support promulgation of Operational Tactics Guide (OTG). FOT&E includes AGM-88E extension to objective aircraft.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement	Project (Number/Name) 2185 / AARGM		
In FY 2013-FY 2019, the AGM-88E AARGM program plans to develop and demonstrate the capability to engage and destroy non-traditional and Overseas Contingency Operations targets through the Destruction of Enemy Air Defenses (DEAD) missions. These developments continue Future Naval Capability Science and Technology investments by the Office of Naval Research initiated in FY 2006.					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2013	FY 2014	FY 2015
Title: Threat Data Library Articles:			-	1.383	0.400
			-	-	-
FY 2013 Accomplishments: N/A					
FY 2014 Plans: As part of the AGM-88E Block 1 Upgrade, continue effort to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continue test and assessment of threat systems. Develop threat data for new target sets.					
FY 2015 Plans: AGM-88E Block 1 Upgrade continues effort to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continue test and assessment of threat systems. Develop threat data for new target sets.					
Title: AARGM Derivative Program (ADP) Articles:			0.500	1.000	0.400
			-	-	-
FY 2013 Accomplishments: Continued to develop the capability to carry-out Destruction of Enemy Air Defenses (DEAD) missions and to attack non-traditional and Overseas Contingency Operations targets. Continued updates to targets.					
FY 2014 Plans: As part of the Block 1 Upgrade to AGM-88E, continue to develop the capability to carry-out DEAD missions and to attack non-traditional and OCO targets. Also develop new propulsion systems and data links to support warfighter needs against advancing threat systems. Develop additional target sets capability.					
FY 2015 Plans: Block 1 Upgrade to AGM-88E continues to develop the capability to carry-out DEAD missions and to attack non-traditional and OCO targets. Develop additional target sets capability.					
Title: Capabilities Procurement Document (CPD) Requirements Articles:			5.437	-	-
			-	-	-
FY 2013 Accomplishments:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>	Project (Number/Name) 2185 / AARGM		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2013	FY 2014	FY 2015
Block 1 Upgrade included development of Key Performance Parameter (KPP-3) and Integrated Broadcast Service-Receiver requirements in accordance with the Capabilities Procurement Document. FY 2014 Plans: N/A FY 2015 Plans: N/A					
Title: Follow-on Operational Test and Evaluation (FOT&E) FY 2013 Accomplishments: Started FOT&E for AARGM. FY 2014 Plans: Continue FOT&E for AARGM Block 1 utilizing COMOPTEVFOR requirements for suitable and effective for desired flights, targets and locations. FY 2015 Plans: Continue FOT&E, including Integrated Test (IT) and Operational Test (OT) for AARGM Block 1 utilizing COMOPTEVFOR requirements for suitable and effective for desired flights, targets and locations.			2.299 Articles: -	9.864 -	12.828 -
Title: ADVANCED DEVELOPMENT FY 2013 Accomplishments: N/A FY 2014 Plans: N/A FY 2015 Plans: Continue support for advanced development, analysis activities of testing, configuration control board review, test plan reviews, requirements analysis and weapons integration analysis.			- Articles: -	- -	2.449 -
Accomplishments/Planned Programs Subtotals			8.236	12.247	16.077

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy									Date: March 2014			
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement				Project (Number/Name) 2185 / AARGM				
C. Other Program Funding Summary (\$ in Millions)												
	<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
	• WPN 2327: HARM Mods	83.885	94.060	111.739	-	111.739	123.475	196.727	226.128	235.678	159.984	1,478.404
Remarks												
D. Acquisition Strategy												
The AARGM program started as a Phase I Small Business Innovative Research (SBIR), Advanced Technology Program, evolved into a Phase III SBIR program, and transitioned into a System Development and Demonstration (SD&D) Acquisition Category 1C program in June 2003. The AARGM SD&D fulfills U.S. Navy operational requirements and incorporates AARGM Advanced Technology Development and Quick Bolt Advanced Concept Technology Demonstration - demonstrated system requirements. Government responsibilities for SD&D have included monitoring, technical assessment, and validation of contractor technology development and testing. Milestone C was achieved 4Q FY 2008, followed by a combined FY08/FY09 Low Rate Initial Production (LRIP) contract award in 1Q FY 2009. LRIP I deliveries commenced 3Q FY 2010. Full-Rate Production (FRP) decision was received 20 August 2012 with FRP contract award on 10 September 2012 and deliveries have begun in January 2014. Block 1 IOC anticipated for 3Q FY 2016.												
E. Performance Metrics												
Achieved Milestone C in 2008. Completed Developmental Testing in 2009. Successfully completed Operational Test Readiness Review in 2010. Successfully completed Operational Test in 3Q FY 2012. Full-Rate Production approval was granted in 4Q FY 2012, and deliveries will commence in FY 2014.												

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy												Date: March 2014			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement				Project (Number/Name) 2185 / AARGM					
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSMA : Arlington, VA	1.473	0.500	Jun 2013	-		-		-		-	7.161	9.134	-
Systems Engineering	WR	NAWC-WD : China Lake, CA	63.389	3.108	Nov 2012	3.989	Nov 2013	3.885	Nov 2014	-		3.885	14.432	88.803	-
Software Development	WR	SPAWAR : San Diego, CA	0.263	0.108	Oct 2013	0.100	Mar 2014	0.050	Mar 2015	-		0.050	-	0.521	-
Telemetry Section Development	WR	NAWC-WD : China Lake, CA	1.300	2.099	Jun 2013	1.600	Nov 2013	-		-		-	-	4.999	-
Mission Planning	WR	Various : Various	0.000	-		0.100	Mar 2014	0.100	Mar 2015	-		0.100	-	0.200	-
Prior year Prod Dev no longer funded in the FYDP	Various	Various : Various	527.894	-		-		-		-		-	-	527.894	-
Subtotal			594.319	5.815		5.789		4.035		-		4.035	21.593	631.551	-
Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analyses	Various	Various : Various	0.711	-		-		-		-		-	0.100	0.811	-
Prior year Support no longer funded in the FYDP	Various	Various : Various	6.436	-		-		-		-		-	-	6.436	-
Subtotal			7.147	-		-		-		-		-	0.100	7.247	-
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NAWC-WD : China Lake, CA	22.435	1.615	Nov 2012	2.000	Nov 2013	-		-		-	1.286	27.336	-
Operational and Integrated Test & Evaluation (IT&OT)	WR	COMOPTEVFOR : Norfolk, VA	9.979	0.130	Nov 2012	3.000	Nov 2013	5.818	Nov 2014	-		5.818	2.213	21.140	-
Development Test & Evaluation	SS/IDIQ	ATK : Woodland Hills, CA	0.505	-		0.800	Feb 2014	0.950	Feb 2015	-		0.950	-	2.255	2.255

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy												Date: March 2014			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement				Project (Number/Name) 2185 / AARGM					
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year T&E no longer funded in the FYDP	Various	Various : Various	7.469	-		-		-		-		-	-	7.469	-
Operational and Integrated Test & Evaluation (IT&OT)	WR	NAWC-WD : China Lake, CA	0.000	-		-		4.630	Nov 2014	-		4.630	-	4.630	-
Subtotal			40.388	1.745		5.800		11.398		-		11.398	3.499	62.830	-
Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	3.091	0.230	Feb 2013	0.207	Feb 2014	0.186	Feb 2015	-		0.186	0.200	3.914	-
Travel	WR	NAVAIR HQ : Patuxent River, MD	1.657	0.021	Nov 2012	0.019	Jan 2014	0.017	Jan 2015	-		0.017	0.100	1.814	-
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	0.021	0.425	Nov 2012	0.432	Nov 2013	0.441	Nov 2014	-		0.441	2.000	3.319	-
Prior year Mgmt no longer funded in the FYDP	Various	Various : Various	10.250	-		-		-		-		-	-	10.250	-
Subtotal			15.019	0.676		0.658		0.644		-		0.644	2.300	19.297	-
Remarks Contract Type for Travel is TO															
			Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			656.873	8.236		12.247		16.077		-		16.077	27.492	720.925	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy																							Date: March 2014							
Appropriation/Budget Activity 1319 / 7										R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement										Project (Number/Name) 2185 / AARGM										
AARGM		FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
Acquisition Milestones																														
Milestones																														
Test & Evaluation																														
Operational Evaluation																														
Block 1 Upgrade DT/OT		BLK 1 SW & INT																												
		BLK 1 DT/IT&E																												
Follow-on Test and Evaluation									FOTE																					
Production Milestones																														
Contract Award					FRP Lot 2 ●		FRP Lot 3 ●				FRP Lot 4 ●				FRP Lot 5 ●				FRP Lot 6 ●				FRP Lot 7 ●				FRP Lot 8 ●			
Low Rate Initial Production Deliveries																														
		LRIP 3 - 44 (WPN)																												
Full-Rate Production Deliveries																														

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>	Project (Number/Name) 2185 / <i>AARGM</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AARGM				
Acquisition Milestones: Milestones: BLOCK 1 Initial Operating Capability	3	2016	3	2016
Test & Evaluation: Block 1 Upgrade DT/OT: Block 1 Software Development and Integration	1	2013	3	2014
Test & Evaluation: Block 1 Upgrade DT/OT: Block 1 Upgrade Development Test/ Integrated Test and Evaluation	1	2013	3	2014
Test & Evaluation: Follow-on Test and Evaluation: Follow-on Test and Evaluation	4	2014	2	2016
Production Milestones: Contract Award: Full-Rate Production Lot 2	4	2013	4	2013
Production Milestones: Contract Award: Full-Rate Production Lot 3	3	2014	3	2014
Production Milestones: Contract Award: Full-Rate Production Lot 4	3	2015	3	2015
Production Milestones: Contract Award: Full-Rate Production Lot 5	3	2016	3	2016
Production Milestones: Contract Award: Full-Rate Production Lot 6	3	2017	3	2017
Production Milestones: Contract Award: Full-Rate Production Lot 7	3	2018	3	2018
Production Milestones: Contract Award: Full-Rate Production Lot 8	3	2019	3	2019
Low Rate Initial Production Deliveries: Low Rate Initial Production 3 Delivery (WPN)	1	2013	1	2014
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 1 (WPN)	2	2014	1	2015
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 2 (WPN)	2	2015	1	2016
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 3 (WPN)	2	2016	1	2017
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 4 (WPN)	2	2017	1	2018
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 5 (WPN)	2	2018	1	2019

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement				Project (Number/Name) 3212 / MEDUSA JCTD			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
3212: MEDUSA JCTD	29.767	3.096	-	-	-	-	-	-	-	-	-	32.863
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

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

Note

Beginning in FY 2014, a new Program Element (PE) was established (BA 7 - 0605555N) for the Direct and Time Sensitive Strike Program Office to support research, development, test and evaluation of Strike Weapons employed from a multitude of fixed and rotary wing aircraft in support of offensive and defensive land and sea based targets across multiple mission areas. This project unit has been transferred to PE 0605555N.

A. Mission Description and Budget Item Justification

The Medusa Joint Capability Technology Demonstration (JCTD) will demonstrate the Low Cost Guided Imaging Rockets (LOGIR) technology currently being developed at the Naval Air Warfare Center Weapons Division China Lake on the MH-60S. LOGIR provides "fire and forget" capability to 2.75-inch rockets in support of Sea Shield Pillar, increases platform lethality against Fast Attack Craft (FAC)/Fast Inshore Attack Craft (FIAC) threat, provides a low-cost Imaging InfraRed precision guidance section for the existing 2.75-inch unguided rockets and provides maximum precision kills per sortie, low cost, minimum collateral damage, increased efficiency, and increased standoff. Initial Program documentation (i.e. Performance Spec, Capabilities Development Document) will be developed within the scope of the JCTD.

Digital Rocket Launcher (DRL) provides 2.75 inch-rocket capability on MH-60R/S in support of Sea Shield Pillar, increases lethality against FAC/FIAC threat. The addition of the Advanced Precision Kill Weapons System guidance section for the existing 2.75 inch unguided rockets provides maximum precision kills per sortie, minimum collateral damage, increased efficiency and increased standoff.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
Title: Digital Rocket Launcher	3.096	-	-
Articles:	-	-	-

FY 2013 Accomplishments:

Funding will be used for the development of a DRL for 2.75 rockets. Delivery order with Arnold Defence & Electronics will be awarded for test asset manufacturing. Electronic circuit boards will be assembled, and test plan completed. Aircraft integration, qualification testing and all additional test requirements to include shipboard certification testing will be completed. Class I Engineering Change Proposal will be created and completed. Naval Air Training and Operating Procedures Standardization (NATOPS) manuals, support equipment, maintenance plan and training will be updated to include DRL.

FY 2014 Plans:

N/A

FY 2015 Plans:

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014	
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>	Project (Number/Name) 3212 / <i>MEDUSA JCTD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014
N/A			
Accomplishments/Planned Programs Subtotals		3.096	-
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The MEDUSA Joint Capability Technology Demonstration was performed in FY 2009 through FY 2011. The Digital Rocket Launcher is a Rapid Deployment Capability with Early Operational Capability in FY 2014, which will be a combination of procurement from government and contractor sources for the final product.			
E. Performance Metrics			
Integration and Demonstration was completed in FY 2012. Performance Spec and Capability Development Document was completed in FY 2012.			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy												Date: March 2014			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>				Project (Number/Name) 3212 / <i>MEDUSA JCTD</i>					
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD : China Lake, CA	8.778	0.356	Oct 2012	-		-		-		-	-	9.134	-
Systems Engineering (DRL)	Various	NAVAIR : Lakehurst, NJ	0.000	0.110	Jun 2013	-		-		-		-	-	0.110	-
Systems Engineering (DRL)	WR	NAWC-AD : Patuxent River, MD	0.781	0.026	Jan 2013	-		-		-		-	-	0.807	-
Systems Engineering (DRL)	Various	NSWC : Indian Head, MD	2.673	0.696	Nov 2012	-		-		-		-	-	3.369	-
Prior year Prod Dev no longer funded in the FYDP	Various	Various : Various	12.383	-		-		-		-		-	-	12.383	-
Subtotal			24.615	1.188		-		-		-		-	-	25.803	-
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation (DRL)	WR	NAWC-AD : Patuxent River, MD	0.000	1.908	Dec 2012	-		-		-		-	-	1.908	-
Prior year T&E no longer funded in the FYDP	Various	Various : Various	4.464	-		-		-		-		-	-	4.464	-
Subtotal			4.464	1.908		-		-		-		-	-	6.372	-
Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Mgmt no longer funded in the FYDP	Various	Various : Various	0.688	-		-		-		-		-	-	0.688	-
Subtotal			0.688	-		-		-		-		-	-	0.688	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy											Date: March 2014				
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0205601N / Harm Improvement					Project (Number/Name) 3212 / MEDUSA JCTD					
			Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			29.767	3.096		-		-		-		-	-	32.863	-

Remarks

NOTE: This project has been moved to a new PE - 0605555N - all Cost to Complete information will be reflected under the new PE.

UNCLASSIFIED

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

Date: March 2014

Appropriation/Budget Activity

1319 / 7

R-1 Program Element (Number/Name)

PE 0205601N / Harm Improvement

Project (Number/Name)

3212 / MEDUSA JCTD

Medusa/DRL	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Test & Evaluation																												
Ground Test			GT																									
Centrifuge		CT																										
AC/ Fit/Rap Test		AC-F/R																										
Vibration Test		VT																										
Ground Launch 2 DRL			GL DRL																									
Ground Launch D4				GL D4																								
A/C Functional Test				A/C FT																								

2015OSD - 0205601N - 3212

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / <i>Harm Improvement</i>	Project (Number/Name) 3212 / <i>MEDUSA JCTD</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Medusa/DRL</i>				
Test & Evaluation: Ground Test: Ground Test	2	2013	3	2013
Test & Evaluation: Centrifuge: Centrifuge Test	2	2013	2	2013
Test & Evaluation: AC/ Fit/Rap Test: AC/ Fit/Rap Test	2	2013	3	2013
Test & Evaluation: Vibration Test: Vibration Test	2	2013	3	2013
Test & Evaluation: Ground Launch 2 DRL: Ground Launch 2 DRL	3	2013	3	2013
Test & Evaluation: Ground Launch D4: Ground Launch D4	4	2013	4	2013
Test & Evaluation: A/C Functional Test: A/C Functional Test	4	2013	4	2013