Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205601N *I Harm Improvement*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	719.941	13.581	17.420	52.708	-	52.708	83.991	79.602	64.858	25.409	Continuing	Continuing
1780: *HARM Improvement*	46.312	1.339	1.343	1.383	-	1.383	1.428	1.424	1.452	1.481	Continuing	Continuing
2185: *AARGM*	673.629	12.242	16.077	12.904	-	12.904	4.839	4.820	4.803	4.901	2.664	736.879
2189: *AARGM ER*	0.000	-	-	38.421	-	38.421	77.724	73.358	58.603	19.027	Continuing	Continuing
Program MDAP/MAIS Code: 368												

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 PE 0605555N beginning in FY 2014: 3212 - MEDUSA Joint Capability Technology Demonstration (JCTD) and 3412 - Hellfire-Romeo (Hellfire-R) Integration. Project Unit 2189 was established for the Anti-Radiation Guided Missile (AARGM) Extended Range (ER) developmental effort and will be a new start in FY 2016.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*		R-1 Program Element (Number/Name) PE 0205601N *I Harm Improvement*			
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	13.586	17.420	6.982	-	6.982
Current President's Budget	13.581	17.420	52.708	-	52.708
Total Adjustments	-0.005	-	45.726	-	45.726
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.005	-			
• Program Adjustments	-	-	46.400	-	46.400
• Rate/Misc Adjustments	-	-	-0.674	-	-0.674

Change Summary Explanation

The FY 2016 funding request was reduced by $0.326 million to account for the availability of prior year execution balances.

Technical: FY16-FY20 funding increases to support AARGM Extended Range (ER) Development reflected in PU2189.

Schedule: PU2185 AARGM Block 1 Test and Evaluation was updated to an integrated test approach for Block 1 Integrated Testing / Operational Testing Follow-on Operational Test & Evaluation (IT/OT FOT&E). AARGM Block 1 software upgrade Fleet Release estimated 1Q2017 and IT/OT FOT&E completion expected 4Q2016. Full-Rate Production-1 (FRP1) deliveries have been extended from 1Q2015 to 2Q2015 as a result of a contractual modification to the delivery schedule signed in August 2014.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1780: *HARM Improvement*	46.312	1.339	1.343	1.383	-	1.383	1.428	1.424	1.452	1.481	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: HARM Foreign Military Assessment (FMA)	1.339	1.343	1.383	-	1.383
Articles:	-	-	-	-	-

FY 2014 Accomplishments:

The FMA team continued to conduct FMA analysis and engineering to exploit vulnerabilities of foreign weapon system threats. Focused on new threat systems as they became 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 expanded collection, analysis, and definition of radar parametric related to HARM 5A improvements, with feedback from full Fleet fielding in 2013. Team has continued 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 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

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 1780 / *HARM Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
ARM targets. 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 2016 Base 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 ARM ASC. Expect continued testing on advanced Surface-to-Air weapons and related IADS, jammers and ARM countermeasures, and non-traditional ARM targets. 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 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.339	1.343	1.383	-	1.383

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 FMA testing analysis to support the HARM.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD : China Lake, CA	2.476	1.337	Nov 2013	1.341	Nov 2014	1.381	Nov 2015	-		1.381	Continuing	Continuing	Continuing
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	24.732	-		-		-		-		-	-	24.732	-
		Subtotal	27.208	1.337		1.341		1.381		-		1.381	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Eval	WR	NAWC-WD : China Lake, CA	18.701	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	18.701	-		-		-		-		-	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	Various : Various	0.403	0.002	Jan 2014	0.002	Jan 2015	0.002	Jan 2016	-		0.002	Continuing	Continuing	Continuing
		Subtotal	0.403	0.002		0.002		0.002		-		0.002	-	-	-

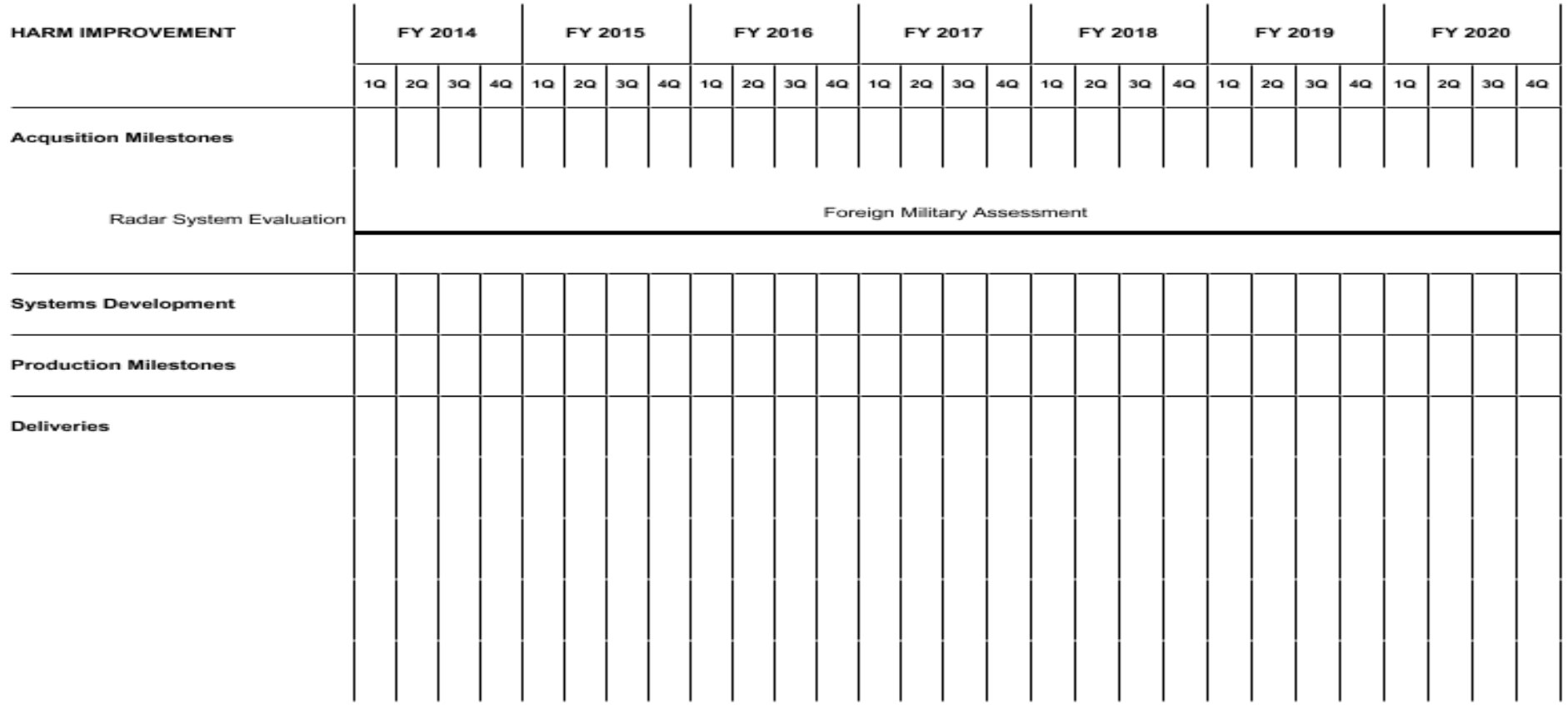
Remarks

Contract Type for Travel is Travel Order (TO).

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	46.312	1.339		1.343		1.383		-		1.383	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 1780 / *HARM Improvement*



2016PB - 0205601N - 1780

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 1780 / *HARM Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
HARM IMPROVEMENT				
Acqusition Milestones: Radar System Evaluation: Radar System Evaluation - Foreign Military Assessment	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2185 / *AARGM*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2185: *AARGM*	673.629	12.242	16.077	12.904	-	12.904	4.839	4.820	4.803	4.901	2.664	736.879
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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. Full-Rate Production (FRP) decision was received 4 September 2012 with FRP contract award on 10 September 2012, and deliveries began in January 2014. The program awarded FRP-3 on 23 April 2014 with deliveries projected to begin in January 2016.

The AARGM Block 1 Upgrade program began in FY 2012 and consists of a software only upgrade to deferred KPP3 and to correct IOT&E deficiencies in the AGM-88E AUR as well as the Common Munitions Built-in Test (BIT) Reprogramming Equipment (CMBRE). 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).

In FY 2014 - FY 2020, 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.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Threat Data Library	1.828	0.400	0.400	-	0.400
Articles:	-	-	-	-	-
FY 2014 Accomplishments: As part of the Air-to-Ground Missile (AGM)-88E Block 1 Upgrade, continued effort to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continued the test and assessment of threat systems. Developed 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.					
FY 2016 Base 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.					
FY 2016 OCO Plans: N/A					
Title: AARGM Derivative Program (ADP)	0.125	0.400	0.400	-	0.400
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Block 1 Upgrade to AGM-88E, 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. Developed new propulsion systems and data links to support warfighter needs against advancing threat systems, and developed 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.					
FY 2016 Base 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.					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Follow-on Operational Test and Evaluation (FOT&E)	9.864	12.828	10.814	-	10.814
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued FOT&E for AARGM Block 1 utilizing Naval Command Operational Test and Evaluation Force (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. ***FY 2016 Base Plans:*** Complete FOT&E, including IT and OT for AARGM Block 1 utilizing COMOPTEVFOR requirements for suitable and effective for desired flights, targets and locations. ***FY 2016 OCO Plans:*** N/A					
Title: Capability Development Document (CDD) and Capability Production Document (CPD)	0.425	1.000	0.290	-	0.290
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Continue activities for development of Key Performance Parameter's and Integrated Broadcast Service-Receiver requirements in accordance with the Capability Production. ***FY 2016 OCO Plans:*** N/A					
Title: ADVANCED DEVELOPMENT	-	1.449	1.000	-	1.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
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. ***FY 2016 Base Plans:*** Continue support for advanced development, analysis activities of testing, configuration control board review, test plan reviews, requirements analysis and weapons integration analysis. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	12.242	16.077	12.904	-	12.904

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN 2327: *HARM Mods*	94.060	106.489	122.298	-	122.298	195.485	224.799	224.486	158.809	-	1,455.666

Remarks

FY 2019, FY 2020 and Total Cost does not include the AARGM ER funding captured under Project Unit 2189.

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 began in January 2014. Block 1 Fleet Release anticipated for 1Q FY 2017.

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 commenced in FY 2014.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2185 / *AARGM*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSMA : Arlington, VA	1.973	-		-		-		-		-	6.661	8.634	-
Systems Engineering	WR	NAWC-WD : China Lake, CA	66.497	3.880	Nov 2013	3.712	Nov 2014	3.448	Nov 2015	-		3.448	11.324	88.861	-
Software Development	WR	SPAWAR : San Diego, CA	0.371	0.100	Mar 2014	0.075	Mar 2015	0.050	Mar 2016	-		0.050	-	0.596	-
Telemetry Section Development	WR	NAWC-WD : China Lake, CA	3.399	1.600	Nov 2013	-		-		-		-	-	4.999	-
Mission Planning	WR	Various : Various	0.000	0.100	Mar 2014	0.100	Mar 2015	0.100	Mar 2016	-		0.100	-	0.300	-
Prior year Prod Dev no longer funded in the FYDP	Various	Various : Various	536.414	-		-		-		-		-	-	536.414	-
		Subtotal	608.654	5.680		3.887		3.598		-		3.598	17.985	639.804	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analyses	Various	Various : Various	0.711	-		-		-		-		-	-	0.711	-
Prior year Support no longer funded in the FYDP	Various	Various : Various	6.436	-		-		-		-		-	-	6.436	-
		Subtotal	7.147	-		-		-		-		-	-	7.147	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NAWC-WD : China Lake, CA	24.050	2.000	Nov 2013	0.220	Nov 2014	-		-		-	1.286	27.556	-
Operational and Integrated Test & Evaluation (IT&OT)	WR	COMOPTEVFOR : Norfolk, VA	10.109	0.543	Nov 2013	8.378	Nov 2014	6.537	Nov 2015	-		6.537	0.331	25.898	-
Development Test & Evaluation	SS/IDIQ	ATK : Woodland Hills, CA	0.505	0.800	Feb 2014	0.950	Feb 2015	0.600	Feb 2016	-		0.600	-	2.855	2.615

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational and Integrated Test & Evaluation (IT&OT)	WR	NAWC-WD : China Lake, CA	0.000	1.795	May 2014	1.430	Nov 2014	0.979	Nov 2015	-		0.979	-	4.204	-
Prior year T&E no longer funded in the FYDP	Various	Various : Various	7.469	-		-		-		-		-	-	7.469	-
		Subtotal	42.133	5.138		10.978		8.116		-		8.116	1.617	67.982	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	3.321	0.830	Feb 2014	0.330	Feb 2015	0.297	Feb 2016	-		0.297	0.200	4.978	-
Travel	WR	NAVAIR HQ : Patuxent River, MD	1.678	0.019	Jan 2014	0.017	Jan 2015	0.015	Feb 2016	-		0.015	0.100	1.829	-
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	0.446	0.575	Nov 2013	0.665	Nov 2014	0.678	Nov 2015	-		0.678	2.000	4.364	-
Program Management Support	Various	NRO : Washington, D.C.	0.000	-		0.200	Nov 2014	0.200	Nov 2015	-		0.200	-	0.400	-
Prior year Mgmt no longer funded in the FYDP	Various	Various : Various	10.250	-		-		-		-		-	-	10.250	-
		Subtotal	15.695	1.424		1.212		1.190		-		1.190	2.300	21.821	-

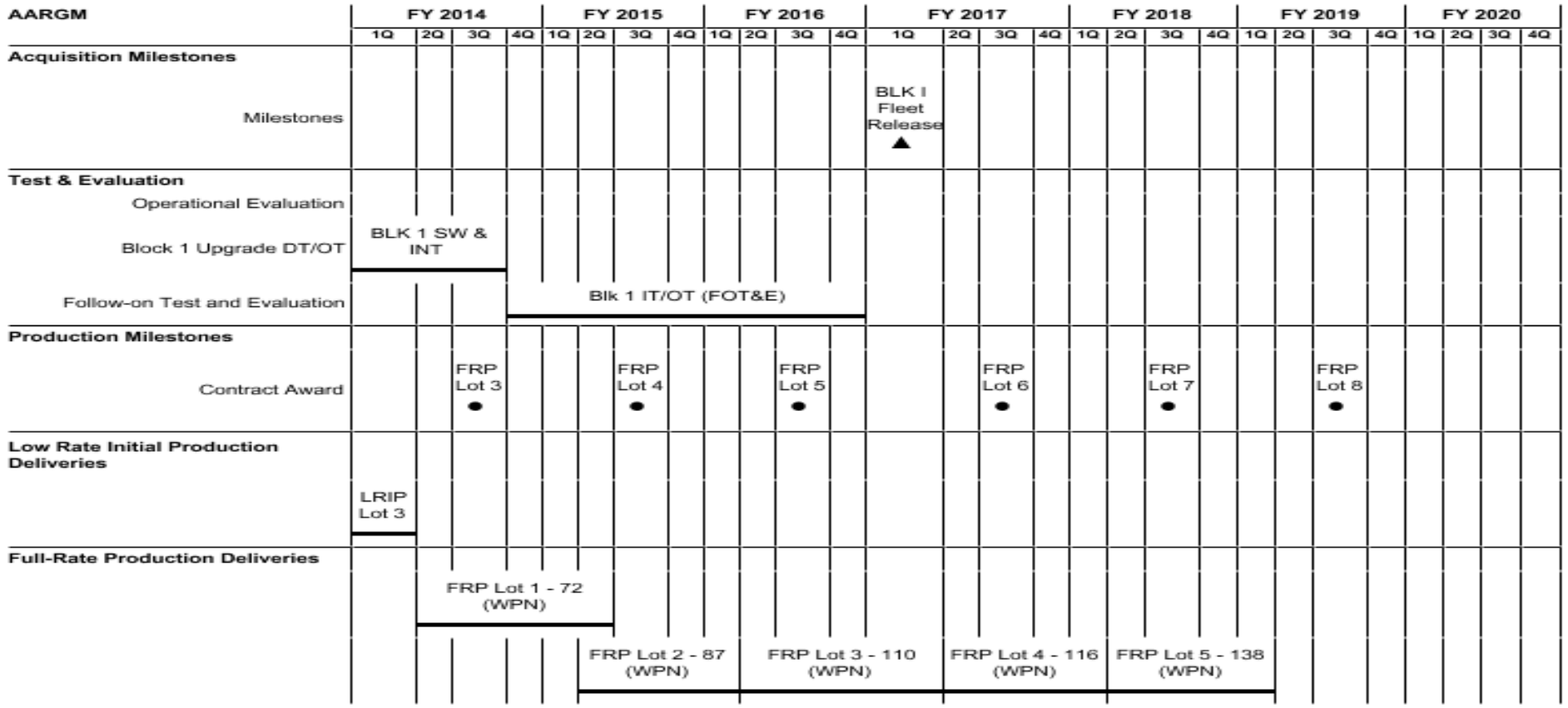
Remarks

Contract Type for Travel is TO

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	673.629	12.242		16.077		12.904		-		12.904	21.902	736.754	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*



2016PB - 0205601N - 2185

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AARGM				
Acquisition Milestones: Milestones: BLOCK 1 Fleet Release	1	2017	1	2017
Test & Evaluation: Block 1 Upgrade DT/OT: Block 1 Software Development and Integration	1	2014	3	2014
Test & Evaluation: Follow-on Test and Evaluation: Block 1 IT/OT (FOT&E)	4	2014	4	2016
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	2014	1	2014
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 1 (WPN)	2	2014	2	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

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2189 / *AARGM ER*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2189: *AARGM ER*	-	-	-	38.421	-	38.421	77.724	73.358	58.603	19.027	Continuing	Continuing
Quantity of RDT&E Articles		-	-	6	-	6	9	20	20	-		

A. Mission Description and Budget Item Justification

The Air-to-Ground (AGM)-88E Extended Range (ER) Upgrade will be a new start for FY 2016 and will develop a hardware and software modification kit that will improve Advanced Anti-Radiation Guided Missile (AARGM)'s operational capabilities, including extended range, survivability and effectiveness against complex, new, and emerging threats. This budget line item will fund a new rocket motor redesign, preliminary design review, test asset procurement, testing, and associated software updates for the AGM-88E ER to ensure these capabilities perform in accordance with established requirements.

AARGM ER will retain the same guidance, sensor, and warhead capabilities of the Block 1 AARGM.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: AARGM ER Development	-	-	38.421	-	38.421
Articles:	-	-	6	-	6
FY 2014 Accomplishments: N/A					
FY 2015 Plans: N/A					
FY 2016 Base Plans: Begin the developmental effort for the AGM-88E ER Upgrade including hardware and software improvements that will improve AARGM's operational capabilities, including extended range, survivability and effectiveness against complex, new, and emerging threats. 6 AARGM ER test articles will be procured for Developmental Test.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	-	38.421	-	38.421

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/2327: *HARM Mods ER*	-	-	-	-	-	-	-	45.100	62.600	-	107.700

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2189 / *AARGM ER*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

FY 2019, FY 2020 and Total Cost does not include the AARGM Block 1 funding, which is captured under Project Unit 2185.

D. Acquisition Strategy

The AARGM Extended Range program will provide a hardware and software modification kit that will improve AARGM's operational capabilities, including extended range, survivability and effectiveness against complex, new, and emerging threats. The programs Initial Operational Capability is planned for 4Q FY2021.

E. Performance Metrics

AARGM ER is expected to enter Developmental Testing in FY 2018 and complete Inital Operational Test and Evaluation in FY 2020.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2189 / *AARGM ER*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	TBD : TBD	0.000	-		-		11.410	Dec 2015	-		11.410	57.928	69.338	-
Primary Hardware Development 2	TBD	TBD : TBD	0.000	-		-		11.988	Dec 2015	-		11.988	19.918	31.906	-
Aircraft Integration	WR	NAWC-WD : China Lake, CA	0.000	-		-		0.578	Nov 2015	-		0.578	3.670	4.248	-
Systems Engineering	WR	NAWC-WD : China Lake, CA	0.000	-		-		1.760	Nov 2015	-		1.760	30.652	32.412	-
Software Development	WR	SPAWAR : San Diego, CA	0.000	-		-		0.050	Jan 2016	-		0.050	Continuing	Continuing	Continuing
Telemetry Section	WR	NAWC-WD : China Lake, CA	0.000	-		-		2.492	Jan 2016	-		2.492	3.873	6.365	-
		Subtotal	0.000	-		-		28.278		-		28.278	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC-WD : China Lake, CA	0.000	-		-		1.691	Mar 2016	-		1.691	3.673	5.364	-
ER Test Assets	TBD	TBD : TBD	0.000	-		-		6.575	Dec 2015	-		6.575	40.102	46.677	-
Operational and Integrated T&E	WR	NAWC-WD : China Lake, CA	0.000	-		-		-		-		-	6.265	6.265	-
		Subtotal	0.000	-		-		8.266		-		8.266	50.040	58.306	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	0.000	-		-		0.100	Nov 2015	-		0.100	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2189 / *AARGM ER*

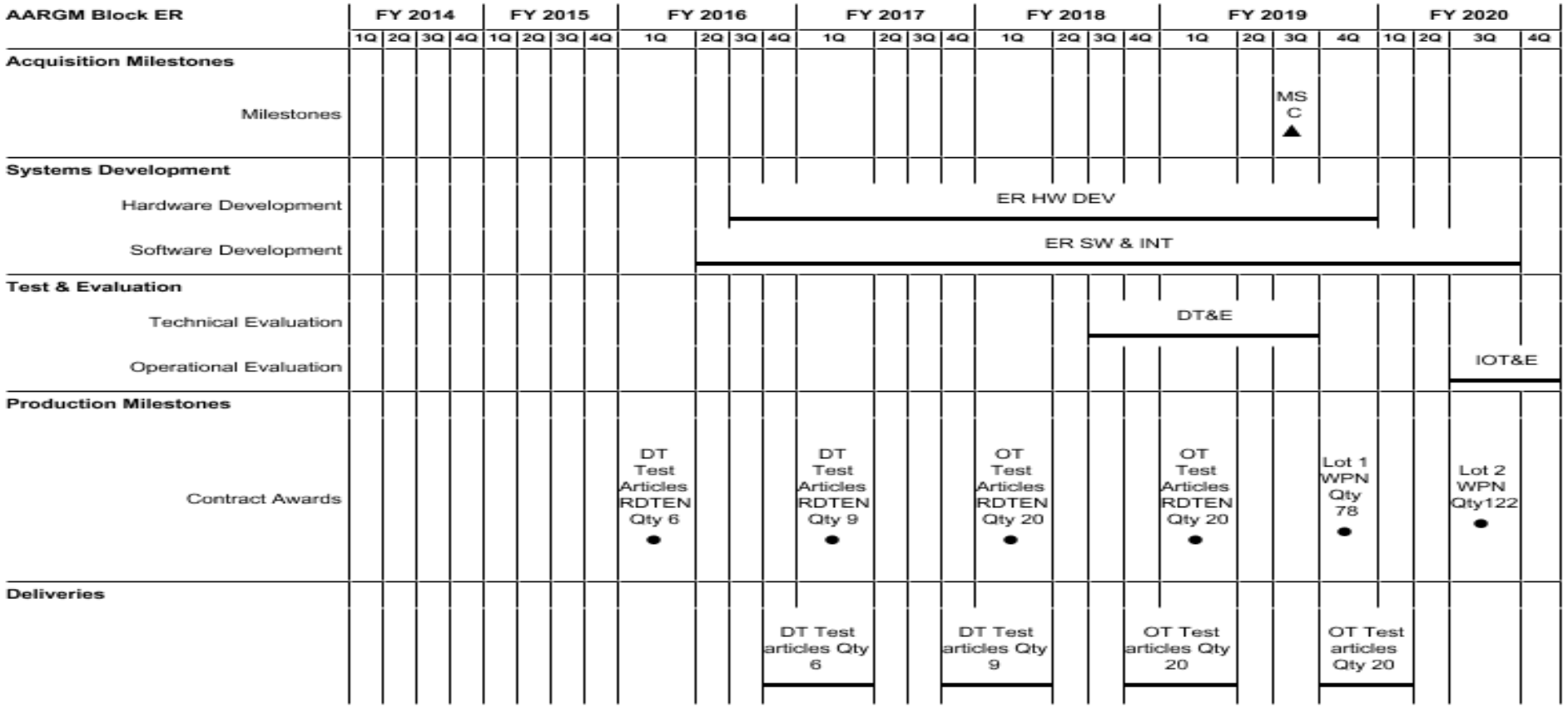
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NRO : Washington, DC	0.000	-		-		0.125	Feb 2016	-		0.125	Continuing	Continuing	Continuing
Travel	WR	NAVAIR HQ : Patuxent River, MD	0.000	-		-		0.050	Nov 2015	-		0.050	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	0.000	-		-		1.602	Nov 2015	-		1.602	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		1.877		-		1.877	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		38.421		-		38.421	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2189 / *AARGM ER*



2016PB - 0205601N - 2189

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2189 / *AARGM ER*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AARGM Block ER				
Acquisition Milestones: Milestones: MS C	3	2019	3	2019
Systems Development: Hardware Development: ER Hardware Development	3	2016	4	2019
Systems Development: Software Development: ER Software Development and Integration	2	2016	3	2020
Test & Evaluation: Technical Evaluation: Developmental Test & Evaluation	3	2018	3	2019
Test & Evaluation: Operational Evaluation: Initial Operational Test & Evaluation	3	2020	4	2020
Production Milestones: Contract Awards: DT Test Articles RDTEN Qty 6	1	2016	1	2016
Production Milestones: Contract Awards: DT Test Articles RDTEN Qty 9	1	2017	1	2017
Production Milestones: Contract Awards: OT Test Articles 1 RDTEN Qty 20	1	2018	1	2018
Production Milestones: Contract Awards: OT Test Articles 2 RDTEN Qty 20	1	2019	1	2019
Production Milestones: Contract Awards: Lot 1 WPN Qty 78	4	2019	4	2019
Production Milestones: Contract Awards: Lot 2 WPN Qty122	3	2020	3	2020
Deliveries: DT Test articles Qty 6	4	2016	1	2017
Deliveries: DT Test articles Qty 9	4	2017	1	2018
Deliveries: OT Test articles 1 Qty 20	4	2018	1	2019
Deliveries: OT Test articles 2 Qty 20	4	2019	1	2020