Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy											Date: May 2017	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604522N *I (U)Air and Missile Defense Radar (AMDR) System*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	992.359	227.051	144.395	32.090	-	32.090	171.384	184.006	57.782	41.230	Continuing	Continuing
3186: *Air and Missile Defense Radar*	992.359	227.051	144.395	32.090	-	32.090	171.384	184.006	57.782	41.230	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): P384

A. Mission Description and Budget Item Justification

Air and Missile Defense Radar (AMDR): (NOTE: FY14 and prior year funding is in PE 0604501N) The AMDR suite is being developed to fulfill Integrated Air and Missile Defense requirements for multiple ship classes. This suite consists of an S-Band radar (AMDR-S), an X-band radar and a Radar Suite Controller (RSC). Funding will develop AMDR-S and RSC, and integrate these components with an available X band radar. AMDR will provide multi-mission capabilities, simultaneously supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area and Self Defense against air and surface threats. For the Ballistic Missile Defense (BMD) capability, increased radar sensitivity and bandwidth over current radar systems are needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges, concurrent with Area and Self Defense against Air and Surface threats. For the Area Air Defense and Self Defense capability, increased sensitivity and clutter capability is needed to detect, react to, and engage stressing Very Low Observable/Very Low Flyer (VLO/VLF) threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an active phased array radar with the required capabilities to address the evolving threat. The AMDR suite will obtain performance and technology enhancements throughout its service life based upon an approach that includes modularity of hardware and software, a scalable design and Open Architecture (OA) compliance. The FY19-22 controls include funding to procure long lead hardware to build a single AMDR array as well as support the installation and checkout on an unmanned self-defense test ship. This funding will support the at-sea testing of the DDG-51 Flt III and Aegis Advanced Capability Build 20 (ACB 20) requirements. However, this does not include any funding for procurement of testing assets and the conduct of the testing efforts. The program is on track to complete developmental testing and deliver to the DDG 51 Flight III.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	232.677	144.395	31.923	-	31.923
Current President's Budget	227.051	144.395	32.090	-	32.090
Total Adjustments	-5.626	0.000	0.167	-	0.167
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.626	0.000			
• Program Adjustments	0.000	0.000	-0.130	-	-0.130

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy					Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604522N *I (U)Air and Missile Defense Radar (AMDR) System*			
• Rate/Misc Adjustments	0.000	0.000	0.297	-	0.297

Change Summary Explanation

FY16: $5.6M reduction due to Small Business Innovative Research (SBIR) adjustment.

FY16 and FY17 funding requirements have changed since PB17 primarily due to a change in Development Test (DT-3) test methodology from inbound shipboard launch to outbound land-based launch which resulted in an overall reduction to total Government FY16 and FY17 Test & Evaluation costs. "Test Assets and Facilities" funding decreased in FY16 and increased in FY17 due to re-phasing funds required for AEGIS Readiness Assessment Vehicle (ARAV) targets. "Operations and Analysis" funding decreased in both FY16 and FY17. The significant decrease in FY17 is due to removing costs associated with the shipboard launch platform.

The overall decrease in Government Test and Evaluation costs was offset by Raytheon contract overruns. Raytheon FY16 and FY17 funding increased primarily due to Digital Receiver/Exciter and Digital Beamformer performance problems. This resulted in changes to "AMDR Hardware", "AMDR Software", and "AMDR Design, Support, Integration, Test & Evaluation" funding levels in the R-2A.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	Project (Number/Name) 3186 / *Air and Missile Defense Radar*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3186: *Air and Missile Defense Radar*	992.359	227.051	144.395	32.090	-	32.090	171.384	184.006	57.782	41.230	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: P384

A. Mission Description and Budget Item Justification

Air and Missile Defense Radar (AMDR): (NOTE: FY14 and prior year funding is in PE 0604501N) The AMDR suite is being developed to fulfill Integrated Air and Missile Defense requirements for multiple ship classes. This suite consists of an S-Band radar (AMDR-S), an X-band radar and a Radar Suite Controller (RSC). Funding will develop AMDR-S and RSC, and integrate these components with an available X band radar. AMDR will provide multi-mission capabilities, simultaneously supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area and Self Defense against air and surface threats. For the Ballistic Missile Defense (BMD) capability, increased radar sensitivity and bandwidth over current radar systems are needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges, concurrent with Area and Self Defense against Air and Surface threats. For the Area Air Defense and Self Defense capability, increased sensitivity and clutter capability is needed to detect, react to, and engage stressing Very Low Observable/Very Low Flyer (VLO/VLF) threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an active phased array radar with the required capabilities to address the evolving threat. The AMDR suite will obtain performance and technology enhancements throughout its service life based upon an approach that includes modularity of hardware and software, a scalable design and Open Architecture (OA) compliance. The FY19-22 controls include funding to procure long lead hardware to build a single AMDR array as well as support the installation and checkout on an unmanned self-defense test ship. This funding will support the at-sea testing of the DDG-51 Flt III and Aegis Advanced Capability Build 20 (ACB 20) requirements. However, this does not include any funding for procurement of testing assets and the conduct of the testing efforts. The program is on track to complete developmental testing and deliver to the DDG 51 Flight III.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: AMDR HARDWARE (RAYTHEON)	13.859	2.052	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: - Completed procurement of Engineering Development Model (EDM) material - Completed procurement of generators for land-based test site to support DT-3 testing Increase from PB17 planned value due primarily to: - Additional material costs associated with correcting Digital Receiver Exciter (DREX) and Digital Beamformer deficiencies and performance issues					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Increased Transmit/Receive Integrated Multi-channel Module (TRIMM) material costs including Monolithic Microwave Integrated Circuit (MMICs) yield issues - Costs associated with resolution of supplier issues with Array Power System components ***FY 2017 Plans:*** - Procure spares for DT-3 Testing Increase from PB17 planned value due primarily to: - Additional DREX, TRIMM and Power Distribution System (PDS) spares required for DT-3 testing at the PMRF test facility ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A					
Title: AMDR SOFTWARE (RAYTHEON)	36.663	11.896	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: - Designed, coded, tested, and integrated software builds to support conduct of DT-3 Increase from PB17 planned value primarily due to: - Growth in program protection software development and associated defect resolution - Equivalent Lines of Code (ELOC) growth due to less reuse than planned and increased complexity ***FY 2017 Plans:*** - Complete design, code, test, and integration to support completion of DT-3 Increase from PB17 planned value primarily due to: - ELOC growth due to less reuse than planned and increased complexity - Additional engineers assigned to software development teams ***FY 2018 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A ***FY 2018 OCO Plans:*** N/A					
Title: AMDR DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (RAYTHEON)	90.999	47.918	20.181	0.000	20.181
Articles:	-	-	-	-	-
FY 2016 Accomplishments: - Supported Working Groups (WGs) to facilitate successful integration of the radar with the ship and combat system - Delivered the EDM to the Pacific Missile Range Facility (PMRF) - Delivered generators to PMRF - Conducted set up, integration and checkout of the EDM and generators at PMRF - Installed and integrated AN/SPQ-9B at PMRF - Conducted DT-3 Test Readiness Review (TRR) and begin System Integration tests (DT-3) at PMRF Increase from PB17 planned value primarily due to: - Additional DREX testing to address functionality issues encountered during Software Integration and Test - Digital Beamformer design updates including additional firmware development - Additional resources to assist in subcontractor on-site support, risk management, earned value management, and technical oversight					
FY 2017 Plans: - Continue and complete System Integration tests (DT-3) at PMRF - Conduct System Verification Review/Functional Configuration Audit/Production Readiness Review (SVR/FCA/PRR) Increase from PB17 planned value primarily due to: - Increased Integration, Assembly, Test and Checkout costs - Increased cost associated with maintaining/operating Advanced Radar Detection Laboratory (ARDEL) generators - Additional resources to assist in subcontractor on-site support, risk management, earned value management, and technical oversight					
FY 2018 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Provide system engineering and software update support of AEGIS ACB 20 Preliminary Design Review (PDR) ***FY 2018 OCO Plans:*** N/A					
Title: DESIGN, SUPPORT, AND INTEGRATION	18.299	14.663	6.584	0.000	6.584
Articles:	-	-	-	-	-
FY 2016 Accomplishments: - Supported delivery of the EDM to PMRF - Supported delivery and installation of the SPQ-9B to PMRF - Conducted the DT-3 TRR and supported the DT-3 test activities at PMRF ***FY 2017 Plans:*** - Support the SVR/FCA/PRR - Develop documentation in support of Milestone C (MS C) - Support completion of DT-3 test activities at PMRF Decrease from PB17 planned value primarily due to: - Reduced government system engineering to cover increased Raytheon T&E costs ***FY 2018 Base Plans:*** - Support combat system integration and DDG 51 FLT III integration, including preparing for ACB 20 PDR and Critical Design Review (CDR) ***FY 2018 OCO Plans:*** N/A					
Title: TEST AND EVALUATION OPERATIONS AND ANALYSIS	13.733	19.123	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: - Completed test planning in support of test site requirements - Supported the installation of the generators and delivery and integration of the EDM at PMRF - Supported DT-3 TRR and began System Integration tests (DT-3) at PMRF Decrease from PB17 planned value primarily due to:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Removing shipboard launch platform planning, analysis, and pre-deployment engineering costs due to change in test methodology from shipboard launch to land-based launch ***FY 2017 Plans:*** - Complete conduct of DT-3 testing, including launch of test targets Decrease from PB17 planned value primarily due to: - Removing costs associated with operating shipboard launch platform (crew, ship fuel, port fees, etc.) due to change in test methodology from shipboard launch to land-based launch ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A					
Title: TEST AND EVALUATION ASSETS AND FACILITIES	49.372	45.006	3.781	0.000	3.781
Articles:	-	-	-	-	-
FY 2016 Accomplishments: - Continued to procure material for simple and complex separating ballistic missile targets and other test assets to support DT-3 test efforts - Maintained PMRF test site facility - Provided engineering services for required modifications to DT-3 targets Decrease from PB17 planned value primarily due to: - Re-phasing funds from FY16 to FY17 required for AEGIS Readiness Assessment Vehicle (ARAV) targets - Removing costs associated with converting sea based launch platform (installation of launcher, telemetry equipment, deck/power modifications, etc.) ***FY 2017 Plans:*** - Maintain PMRF test site facility - Provide PMRF range services in support of DT-3 test efforts - Provide engineering services in support of DT-3 flight testing Increase from PB17 planned value primarily due to:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Re-phasing funds from FY16 to FY17 required for ARAV targets - Engineering for land-based launcher design/modifications - Use of Kauai Test Facility including storage of hazardous items, use of telemetry equipment, and Flight Safety support ***FY 2018 Base Plans:*** - Maintain PMRF test site ***FY 2018 OCO Plans:*** N/A					
Title: PROGRAM MANAGEMENT	4.126	3.737	1.544	0.000	1.544
Articles:	-	-	-	-	-
FY 2016 Accomplishments: - Provided support to integrated Product Team (IPT) and WGs required for program execution of the Engineering & Manufacturing Development (E&MD) contract - Supported DT-2 and DT-3 test activities - Analyzed and assessed contractor deliverables - Conducted regular Program Management Reviews - Assisted in cost, schedule and performance management, contract management and oversight, earned value assessment, and risk identification and mitigation - Provided support to the TRR to facilitate the start of DT-3 testing - Provided support to technical interchange meetings					
FY 2017 Plans: - Provide support to IPT and WGs required for program execution of the E&MD contract - Analyze and assess contractor deliverables - Conduct regular Program Management Reviews - Assist in cost, schedule and performance management, contract management and oversight, earned value assessment, and risk identification and mitigation - Provide support to the SVR/FCA/PRR - Provide support to technical interchange meetings - Support DT-3 test activities					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Support MS C ***FY 2018 Base Plans:*** - Analyze and assess contractor deliverables - Assist in cost, schedule, and performance management, contract management and oversight, earned value assessment and risk identification and mitigation - Provide support to technical interchange incentives ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	227.051	144.395	32.090	0.000	32.090

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• SCN/2122: *DDG51*	4,207.664	3,660.251	3,640.792	-	3,640.792	3,819.964	3,731.008	3,392.011	3,448.012	Continuing	Continuing

Remarks

D. Acquisition Strategy

AMDR: Plans for the Air and Missile Defense Radar are to leverage research and development investments, integrate sufficiently matured advanced technologies from technology risk reduction efforts, and incorporate Open Architecture approaches to develop a scalable radar design with major improvements in power, sensitivity, resistance to natural and man-made environments over current radar systems for simultaneous multi-mission BMD, Area and Self Defense Anti-Air Warfare (AAW). System design will be accomplished by employing proven technologies and commercial standards to lower schedule risk and develop a product with the lowest life-cycle cost.

Program scope consists of the following phases: a Concept Studies phase; a Technology Development phase, which included competitive prototyping; an E&MD phase, which includes completion of a full EDM for land-based testing; and transition to production. The detailed scope of this acquisition is defined in the approved Milestone B AMDR Acquisition Strategy (AS).

E. Performance Metrics

- Complete Technology Development (TD) phase System Requirements Review, Test Readiness Review, TD Prototype testing, TD System Functional Review, and TD Preliminary Design Review (PDR)
- Achieve Milestone B decision to proceed into Engineering & Manufacturing Development (E&MD) phase
- Award E&MD contract

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

- Conduct E&MD Phase Integrated Baseline Review
- Conduct Hardware Delta PDR and System Delta PDR
- Conduct Hardware and System CDRs
- Complete Engineering Development Model (EDM) testing
- Achieve Milestone C decision to proceed into production and exercise Low Rate Initial Production (LRIP) options
- Conduct SVR/FCA/PRR
- Support ACB 20 and Ballistic Missile Defense (BMD) 6.X PDR and CDR
- Award Integration and Production Support Contract

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Manufacturing Development	C/CPIF	Raytheon : Sudbury, MA	72.404	141.521	Oct 2015	61.866	Oct 2016	15.385	Oct 2017	-		15.385	Continuing	Continuing	Continuing
Integration and Production Support	SS/FFP	TBD : TBD	0.000	0.000		0.000		4.796	May 2018	-		4.796	0.000	4.796	-
		Subtotal	72.404	141.521		61.866		20.181		-		20.181	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	MIPR	GTRI : Atlanta, GA	0.512	0.120	Nov 2016	0.068	May 2017	0.000		-		0.000	0.000	0.700	-
Systems Engineering	SS/CPFF	JHU/APL : Laurel, MD	6.534	5.703	Mar 2016	5.321	Dec 2016	2.449	Dec 2017	-		2.449	Continuing	Continuing	Continuing
Systems Engineering	MIPR	MIT : Cambridge, MD	0.878	0.697	Jun 2016	0.868	Mar 2017	0.401	Mar 2018	-		0.401	Continuing	Continuing	Continuing
Systems Engineering	WR	NRL : Washington, DC	0.934	1.257	Dec 2015	0.865	Nov 2016	0.398	Nov 2017	-		0.398	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC/CR : Crane, IN	1.761	1.853	Jan 2016	1.077	Nov 2016	0.495	Nov 2017	-		0.495	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC/DD : Dahlgren, VA	5.310	3.061	Feb 2016	2.966	Dec 2016	1.453	Dec 2017	-		1.453	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC/PHD : Port Hueneme, CA	1.258	1.294	Mar 2016	0.863	Nov 2016	0.397	Nov 2017	-		0.397	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	SPA (SEAPORT) : Washington, DC	2.152	3.207	Mar 2016	0.244	Dec 2016	0.000		-		0.000	0.000	5.603	-
Systems Engineering	MIPR	ARL : Adelphi, MD	0.378	0.302	Dec 2015	0.219	Nov 2016	0.241	Nov 2017	-		0.241	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC/CD : Carderock, MD	0.286	0.000		0.000		0.000		-		0.000	0.000	0.286	-
Systems Engineering	WR	NSWC/Corona : Corona, CA	0.228	0.191	Mar 2016	0.160	Apr 2017	0.073	Apr 2018	-		0.073	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Allot	DISA : Scott AFB, Illinois	0.004	0.004	Oct 2015	0.010	Nov 2016	0.011	Nov 2017	-		0.011	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC IH : Indian Head, MD	0.335	0.334	May 2016	0.000		0.000		-		0.000	0.000	0.669	-
Systems Engineering	SS/FFP	Northrop Grumman : Baltimore, MD	0.000	0.066	Sep 2016	0.799	May 2017	0.000		-		0.000	0.000	0.865	-
Systems Engineering	C/FFP	DRS Power & Control Technologies, Inc. : Milwaukee, WI	0.213	0.000		0.000		0.000		-		0.000	0.000	0.213	-
Systems Engineering	SS/CPFF	TBD ESS : TBD	0.000	0.000		1.203	May 2017	0.666	Dec 2017	-		0.666	0.000	1.869	-
Systems Engineering	C/CPIF	AEGIS TECHREP : Moorestown, NJ	0.000	0.210	May 2016	0.000		0.000		-		0.000	0.000	0.210	-
		Subtotal	20.783	18.299		14.663		6.584		-		6.584	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	COMOPTEVFOR : Norfolk, VA	0.246	0.553	Feb 2016	0.624	Feb 2017	0.000		-		0.000	0.000	1.423	-
Test and Evaluation	MIPR	GTRI : Atlanta, GA	0.000	0.000		0.254	May 2017	0.000		-		0.000	0.000	0.254	-
Test and Evaluation	SS/CPFF	JHU/APL : Laurel, MD	4.852	5.602	Mar 2016	8.711	Dec 2016	0.000		-		0.000	0.000	19.165	-
Test and Evaluation	MIPR	MIT : Cambridge, MD	0.254	0.000		0.082	Mar 2017	0.000		-		0.000	0.000	0.336	-
Test and Evaluation	WR	NAWC WD : Pt. Mugu, CA	0.780	1.304	Jan 2016	3.957	Feb 2017	0.000		-		0.000	0.000	6.041	-
Test and Evaluation	WR	NRL : Washington, DC	0.000	1.000	Dec 2015	1.352	Nov 2016	0.000		-		0.000	0.000	2.352	-
Test and Evaluation	WR	NSWC/DD : Dahlgren, VA	0.908	2.160	Feb 2016	2.899	Dec 2016	0.000		-		0.000	0.000	5.967	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	Project (Number/Name) 3186 / *Air and Missile Defense Radar*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	NSWC/PHD : Port Hueneme, CA	1.514	2.599	Mar 2016	2.057	Nov 2016	0.000		-		0.000	0.000	6.170	-
Test and Evaluation	WR	PMRF : Kekaha, HI	0.721	1.545	Jan 2016	9.229	Nov 2016	3.781	Nov 2017	-		3.781	Continuing	Continuing	Continuing
Test and Evaluation	C/CPIF	SPA (SEAPORT) : Washington, DC	0.816	1.422	Mar 2016	0.244	Dec 2016	0.000		-		0.000	0.000	2.482	-
Test and Evaluation	WR	NSWC/PHD WS : Port Hueneme, CA	17.156	44.796	Oct 2015	26.971	Nov 2016	0.000		-		0.000	0.000	88.923	-
Test and Evaluation	WR	NSWC Corona : Corona, CA	3.671	1.014	Dec 2016	0.572	Jan 2017	0.000		-		0.000	0.000	5.257	-
Test and Evaluation	WR	CNA-ONR : Arlington, VA	0.055	0.054	Mar 2016	0.061	Apr 2017	0.000		-		0.000	0.000	0.170	-
Test and Evaluation	C/BA	MDA : Redstone Arsenal, AL	0.000	0.100	Jan 2016	1.242	Jan 2017	0.000		-		0.000	0.000	1.342	-
Test and Evaluation	C/CPIF	Engility : Andover, MA	0.000	0.116	May 2016	0.405	Dec 2016	0.000		-		0.000	0.000	0.521	-
Test and Evaluation	MIPR	DOI : Boise, ID	0.000	0.076	Jun 2016	1.730	Feb 2017	0.000		-		0.000	0.000	1.806	-
Test and Evaluation	WR	NSWC Crane : Crane, IN	0.000	0.627	May 2016	0.000		0.000		-		0.000	0.000	0.627	-
Test and Evaluation	MIPR	AFSEO : Eglin AFB, FL	0.000	0.005	Sep 2016	0.040	Mar 2017	0.000		-		0.000	0.000	0.045	-
Test and Evaluation	WR	FRCE - PMA 226 : Cherry Point, NC	0.000	0.005	Sep 2016	0.000		0.000		-		0.000	0.000	0.005	-
Test and Evaluation	WR	NUWC KP : Keyport, WA	0.000	0.127	Aug 2016	0.261	Nov 2016	0.000		-		0.000	0.000	0.388	-
Test and Evaluation	MIPR	Air National Guard : Tulsa, OK	0.000	0.000		1.472	May 2017	0.000		-		0.000	0.000	1.472	-
Test and Evaluation	WR	COMNAVAIRPAC : San Diego, CA	0.000	0.000		0.074	Feb 2017	0.000		-		0.000	0.000	0.074	-
Test and Evaluation	WR	NSWC CD : Carderock, MD	0.000	0.000		0.924	Jan 2017	0.000		-		0.000	0.000	0.924	-
Test and Evaluation	MIPR	AFRL : Kirtland AFB, NM	0.000	0.000		0.037	May 2017	0.000		-		0.000	0.000	0.037	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	Project (Number/Name) 3186 / *Air and Missile Defense Radar*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	SS/CPFF	TBD ESS : TBD	0.000	0.000		0.931	May 2017	0.000		-		0.000	0.000	0.931	-
		Subtotal	30.973	63.105		64.129		3.781		-		3.781	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Management Services	C/CPIF	SPA (SEAPORT) : Washington, DC	1.102	2.412	Mar 2016	0.488	Dec 2016	0.000		-		0.000	0.000	4.002	-
Travel	Sub Allot	PEOIWS2 : Washington, DC	0.097	0.245	Mar 2016	0.205	May 2017	0.075	Mar 2018	-		0.075	0.000	0.622	-
Support Management Services	WR	NSWC/DD : Dahlgren, VA	867.000	0.821	Feb 2016	0.584	Dec 2016	0.271	Dec 2017	-		0.271	0.000	868.676	-
Support Management Services	C/CPFF	TMB-PSS : Washington, DC	0.000	0.037	Apr 2016	0.225	Dec 2016	0.094	Dec 2017	-		0.094	0.000	0.356	-
Support Management Services	C/CPFF	CACI-PSS : Washington, DC	0.000	0.402	May 2016	0.240	Apr 2017	0.100	Mar 2018	-		0.100	0.000	0.742	-
Support Management Services	C/CPFF	STRATEGIC INSIGHT : Arlington, VA	0.000	0.111	Nov 2016	0.000		0.000		-		0.000	0.000	0.111	-
Support Management Services	C/CPIF	UNC : Chapel Hill, NC	0.000	0.098	Nov 2016	0.000		0.000		-		0.000	0.000	0.098	-
Support Management Services	WR	NSWC/CD : Carderock, MD	0.000	0.000		0.082	May 2017	0.000		-		0.000	0.000	0.082	-
Support Management Services	SS/CPFF	TBD ESS : TBD	0.000	0.000		1.913	May 2017	1.004	Dec 2017	-		1.004	0.000	2.917	-
		Subtotal	868.199	4.126		3.737		1.544		-		1.544	0.000	877.606	-

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	992.359	227.051		144.395		32.090		-		32.090	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	Project (Number/Name) 3186 / *Air and Missile Defense Radar*	

	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

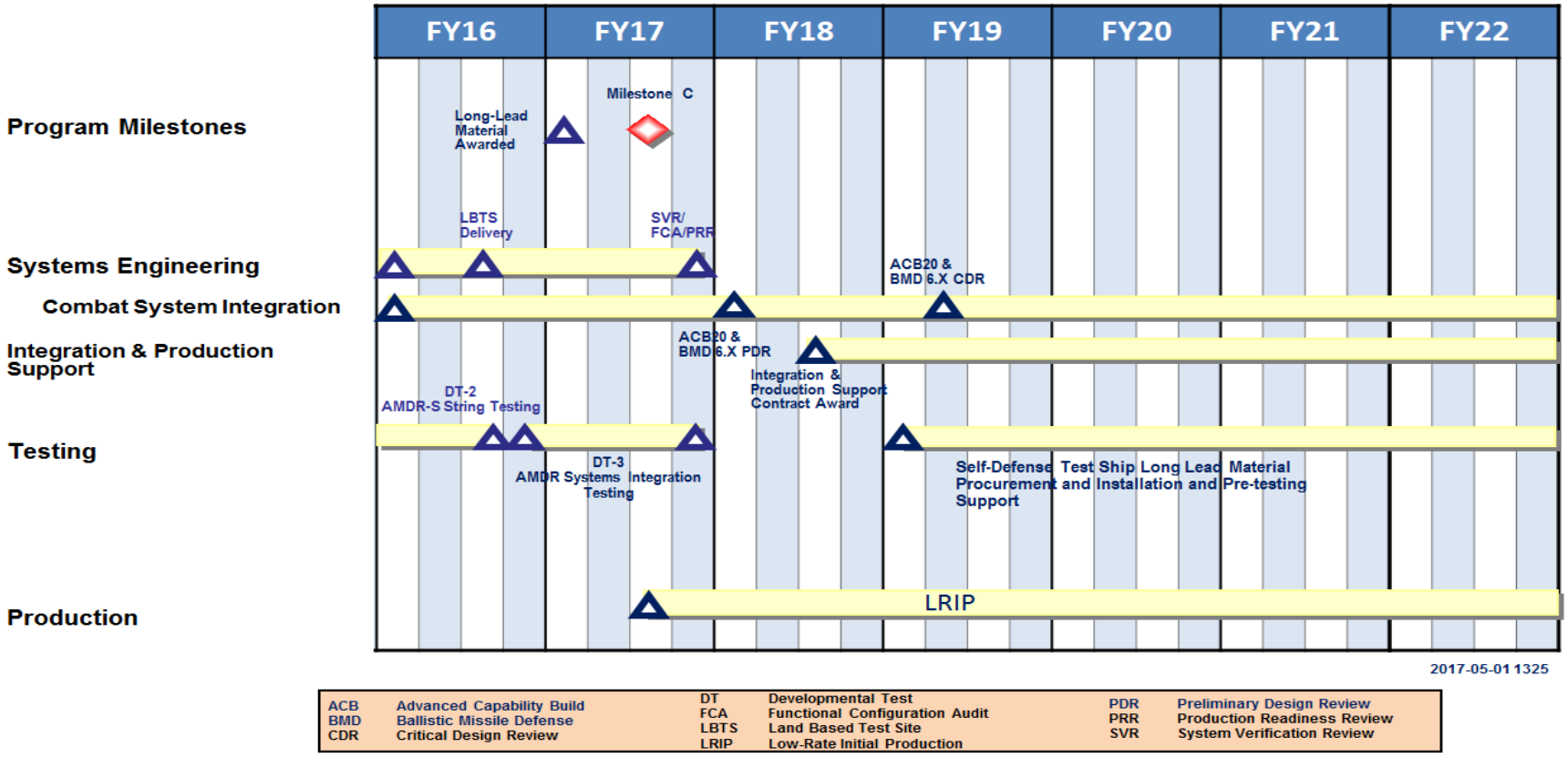

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *(U)Air and Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3186				
E&MD AMDR-S String Testing (DT-2)	1	2016	3	2016
Engineering Development Model delivered to Land Based Test Site	3	2016	3	2016
E&MD AMDR System Integration Testing (DT-3)	4	2016	4	2017
LRIP Long Lead Material Award	1	2017	1	2017
Milestone C	3	2017	3	2017
System Verification Review/Functional Configuration Audit/Production Readiness Review	4	2017	4	2017
ACB 20 and BMD 6.X PDR	1	2018	1	2018
Integration and Production Support Contract Award	3	2018	4	2022
Self-Defense Test Ship Long Lead Material Procurement, Installation, and Pre-testing Support	1	2019	4	2022
ACB 20 and BMD 6.X CDR	2	2019	2	2019