Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy											Date: February 2016	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604307N *I Surface Combatant Cmbt Sys Eng*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	3,174.785	178.430	386.576	282.764	-	282.764	321.628	311.809	261.907	261.246	Continuing	Continuing
1447: *Surf Combatant Combat System Imp*	3,171.052	169.663	371.899	272.306	-	272.306	313.809	305.235	256.826	256.050	Continuing	Continuing
3357: *Aegis Training Improvement Program*	3.733	8.767	14.677	10.458	-	10.458	7.819	6.574	5.081	5.196	Continuing	Continuing
Program MDAP/MAIS Code: 180												

A. Mission Description and Budget Item Justification

This project provides Cruiser and Destroyer AEGIS Combat System (ACS) upgrades and integrates new equipment and systems to pace the threat and capture advances in technology. Examples of captured advanced technologies are: open architecture, advanced information assurance and initial cyber defense, fiber optics, distributed computing architecture, and high performance computing, all of which require corresponding AEGIS Weapon System (AWS) and ACS changes.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	179.112	443.433	281.888	-	281.888
Current President's Budget	178.430	386.576	282.764	-	282.764
Total Adjustments	-0.682	-56.857	0.876	-	0.876
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-56.857			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.000	0.000			
• SBIR/STTR Transfer	-4.682	0.000			
• Program Adjustments	0.000	0.000	29.970	-	29.970
• Rate/Misc Adjustments	0.000	0.000	-29.094	-	-29.094

Change Summary Explanation

FY15 1447:
SBIR Reduction to support congressional law
$2.000M: Ship Modernization, Operation and Sustainment Funding (SMOSF) increase to support AEGIS CG Modernization Plan.
$2.000M: FY15 ATR to support the integration of SeaRAM onto DDG 51 class.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy	Date: February 2016
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604307N *I Surface Combatant Cmbt Sys Eng*

FY16 1447:
Increase in funding between FY15 and FY16 is due to the following:
Development and Integration of Standard Missile (SM-6) BLK IA and Naval Integrated Fire Control - Counter Air (NIFC-CA) 2019 into AEGIS Advanced Capability Build (ACB) 16 (BL 9.C2) Program of Record in support of Ballistic Missile Defense (BMD) Sea Based Terminal capability and air defense improvements against large missile raids.
Addition of Warfighting Improvements (NIFC-2019, BMD improved threat set, Surface Electronic Warfare Improvement Program (SEWIP) BLK II) into AEGIS ACB 20.
AEGIS BL 9.A1 (Cruiser Backfit) Development and Integration Introduction of SEARAM into AEGIS BL 5.3 Program of Record.
Increased operations and maintenance of the AEGIS Combat System Engineering Development Site (CSEDS) facility to support BL 9.C2, ACB 20, BL 9.A1 and SEARAM integration (4 modified or additional combat system suites)
Far Term Interoperability Improvements Project to integrate Identify Friend or Foe (IFF) Mode 5/S.

FY16 3357:
Increase in funding between FY15 and FY16 is due to the following:
Increase to address additional AEGIS ACB16 (BL 9.C2) Training Improvements in support of the additional warfighting scope.

FY17 1447:
Continue AEGIS Far-Term Interoperability Efforts to integrate IFF Mode 5/S
Complete AEGIS BL 5.3 SEARAM Integration and Test Efforts
Continue AEGIS BL 9.A1 Development, Integration and Test Efforts
Continue AEGIS Advanced Capability Build 16 (BL 9.C2) Development, Integration and Test Efforts with limited Government oversight
Continue AEGIS Advanced Capability Build 20 Development, Integration and Test Efforts
Continue AEGIS Task Force Cyber Awakening (TFCA) Development, Integration and Test Efforts
Begin AEGIS BL 5.3.X Upgrade Efforts
FY17 increase is for the AEGIS BL 5.3.X and the Task Force Cyber Awakening projects
FY17 decrease due to $8.323M for Rate/Misc adjustments, $12.8M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015 and $7.971M to account for availability of prior year execution balances.

FY17 3357:
Continue AEGIS ACB16 (BL 9.C2) Training Improvements in support of the additional warfighting scope.
Decrease in AEGIS Training Improvement Program by $0.4M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
1447: *Surf Combatant Combat System Imp*	3,171.052	169.663	371.899	272.306	-	272.306	313.809	305.235	256.826	256.050	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides AEGIS Cruiser & Destroyer ACS upgrades and integrates new equipment and systems to pace the threat and capture advances in technology. The ACS capabilities have continually evolved starting with AEGIS Baseline (BL) 2 on Guided Missile Cruisers (CG) 52-58, BL 3 on CG 59-64, and BL 4 on CG 65-73. In FY 1992, AEGIS BL 5 was introduced on Guided Missile Destroyer (DDG) 51-78, BL 6 on DDG 79-90, BL 7 on DDG 91-112, and BL 9 113 and follow.

The AEGIS Modernization Baselines will provide new technology to replace aging military equipment, extend service life, and maintain combat viability of AEGIS combatants into the future. These baselines reduce combat system maintenance life cycle costs and streamline the development of capabilities. AEGIS BL 8 (Cruiser Modernization) upgraded CG 52-58, while AEGIS BL 9, consisting of an upgraded computing infrastructure and computer program enhancements, will modernize CGs 59,60,62 and DDG 51,52,53,57,61,65 and 69. AEGIS BL 9 will provide updated computer program to CG 52-58 to improve warfighter effectiveness by introducing Naval Integrated Fire Control - Counter Air (NIFC-CA), SM-6 and Fleet Urgent Operational Needs (UONs) and reduce the number of AEGIS Baselines within the AEGIS Fleet. AEGIS BL 9 will also be introduced on the new construction destroyers, starting with DDG 113 and follow.

AEGIS Advanced Capability Build (ACB) 16 and the required Technical Insertion (TI) 16 Computing and Display Plant will provide warfighter upgrades to AEGIS Cruisers and Destroyers to include improved Ballistic Missile Defense (BMD) capabilities (DDG only), SEWIP BLK II, MH-60R Integration, IFF Mode 5/S, SPQ-9B in the Fire Control Loop, Total Ship Training Capability (TSTC), Condition Based Maintenance, Combat System Boundary Defense, NIFC-CA 2019, and NIFC-CA Collateral #3. It will modernize DDG 66-68, 70-73, 79, 81-82, 84, 86-88, modernize CG 63-65, 66-69, 70-73, backfit to TI12 DDG 51-53, 57, 61, 65, 67 and forward fit to new construction DDG 119-123.

AEGIS Advanced Capability Build (ACB) 20 and Technical Insertion (TI) 20 will provide critical warfighter upgrades to AEGIS Destroyers. ACB 20 combat system development and integration efforts will support the Air Missile Defense Radar (AMDR) acquisition milestone requirements and build upon ACB 16 to form the foundation for the AEGIS Flight III DDG Combat System. Provide Computer program updates that can be backfit to AEGIS TI 16 hardware configurations.

AEGIS BL 7.2 will provide a common Computer Program build that consolidates 2 (BL 7.1.3 and BL 7.1R) to one software configuration (BL 7.2) for a 22 ship superset (DDG 91-112). Also addresses operations and maintenance deficiencies to improve warfighting readiness and delivers critical warfighting improvements in air defense.

AEGIS Far Term Interoperability Improvement Plan will address the remaining interoperability issues within fielded AEGIS Combat System configurations to integrate Identify Friend or Foe (IFF) Mode 5/S capabilities. These updates will be implemented in a phased approach to align with current and future AEGIS development efforts.

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AEGIS Task Force Cyber Awakening will assess and provide corrective actions to improve AEGIS Combat System Computer Program and Hardware configurations against emerging threat within the Cyber arena. These improvements will be implemented within AEGIS Combat Systems currently under development.

AEGIS BL 5.3.X will field a single AEGIS Computer Program that merges AEGIS BL 5.3.9 and BMD BL 4.1 enabling a near simultaneous shift from AAW to BMD to AEGIS Flight I/II DDGs to ensure viability against emerging threats until end of service life (ESL). These improvements will include Computer Program updates to integrate the improved radar performance provided by the hardware upgrades to the SPY-1D radar.

AEGIS BL 5.3 SEARAM Integration and Test program will introduce SEARAM as part of the AEGIS Combat System to address Combatant Commander Requirements to improve warfighter capabilities against advanced anti-ship cruise missiles. These updates will be focused on completing integration and test requirements to validate the performance of the integrated capability. These updates will support Demonstration and Operational Test efforts planned for FY16/17.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: AEGIS DEVELOPMENT SUPPORT	30.415	42.077	33.140	0.000	33.140
Articles:	-	-	-	-	-
FY 2015 Accomplishments: AEGIS Development Support covered the following areas: AEGIS Technical Design Agent (TDA), AEGIS System Engineering to identify and evaluate emerging threats and support R3B decision process, Commercial Off The Shelf (COTS) Obsolescence evaluation, and AEGIS Development Site Operations and Maintenance. The AEGIS TDA continued to evaluate Combat System configuration and provided detailed information on overall performance, identified areas where improvements can be implemented to improve the performance of the Combat System in the Air, Surface and Underwater Combat areas. AEGIS System engineering continued to evaluate the Combat System threat capabilities and maintain the Capability Phasing Plan to ensure meaningful improvements are implemented within future Combat System upgrades to meet emergent threats. These efforts were focused on defining the next major upgrade to the AEGIS Combat System (ACB20). AEGIS Development Site Operation and Maintenance supported the NJ Land Based Test Sites (LBTS) to ensure adequate hours were available to support the planned development efforts. In FY15 ~2200 hours were required to support AEGIS ACB12 (BL 9.C0/9.C1), AEGIS BL 7.2A/B, AEGIS ACB16 (9.C2) and AEGIS ACB 20					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
(BL 9.CX, BL 10.C0) development efforts at Combat System Engineering Development Sites (CSEDS), Program Generation Center (PGC), and Naval System Computing Center (NSCC). ***FY 2016 Plans:*** AEGIS Development Support covers the following areas: AEGIS Technical Design Agent (TDA), AEGIS System Engineering to identify and evaluate emerging threats and support R3B decision process, COTS Obsolescence evaluation, and AEGIS Development Site Operations and Maintenance. The AEGIS TDA will continue to evaluate Combat System configuration and provide detailed information on overall performance, identify areas where improvements can be implemented to improve the performance of the Combat System in the Air, Surface and Underwater Combat areas. AEGIS System engineering will continue to evaluate the Combat System threat capabilities and maintain the Capability Phasing Plan to ensure meaningful improvements are implemented within future Combat System upgrades to meet emergent threats. These efforts are focused on defining the next major upgrade to the AEGIS Combat System ACB20. AEGIS Development Site Operation and Maintenance will support NJ Land Based Test Sites (LBTS) to ensure adequate hours are available to support the planned development efforts. In FY16 ~3000 hours were are planned within budget to support AEGIS ACB12 (BL 9.C0/9.C1) AEGIS ACB12 (BL 9.A1), AEGIS BL 7.2A/ B, AEGIS ACB16 (9.C2) and AEGIS ACB 20 (BL 9.CX, BL 10.C0) development efforts at Combat System Engineering Development Sites (CSEDS), Program Generation Center (PGC), SPY-1A Test Facility (STF), and Naval System Computing Center (NSCC). ***FY 2017 Base Plans:*** AEGIS Development Support covers the following areas: AEGIS Technical Design Agent (TDA), AEGIS System Engineering to identify and evaluate emerging threats and support R3B decision process, COTS Obsolescence evaluation, and AEGIS Development Site Operations and Maintenance. The AEGIS TDA will continue to evaluate Combat System configuration and provide detailed information on overall performance, identify areas where improvements can be implemented to improve the performance of the Combat System in the Air, Surface and Underwater Combat areas.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
AEGIS System engineering will continue to evaluate the Combat System threat capabilities and maintain the Capability Phasing Plan to ensure meaningful improvements are implemented within future Combat System upgrades to meet emergent threats. These efforts are focused on defining the next major upgrade to the AEGIS Combat System ACB20. AEGIS Development Site Operation and Maintenance will support NJ Land Based Test Sites (LBTS) to ensure adequate hours are available to support the planned development efforts. In FY17 ~2400 hours are planned within budget to support AEGIS BL 5.3.X, AEGIS ACB12 (BL 9.A1), AEGIS ACB16 (9.C2) and AEGIS ACB 20 (BL 9.CX, BL 10.C0) development efforts at Combat System Engineering Development Sites (CSEDS), Program Generation Center (PGC), SPY-1A Test Facility (STF), Naval System Computing Center (NSCC), and Surface Combat System Center (SCSC). ***FY 2017 OCO Plans:*** N/A					
Title: FAR TERM INTEROPERABILITY IMPROVEMENT PLAN (FTIIP) ***Articles:*** ***FY 2015 Accomplishments:*** N/A ***FY 2016 Plans:*** Develop and provide comprehensive plan to implement corrective action in a phased approach to address IFF Mode 5/S in conjunction with ongoing AEGIS development efforts. Conduct cross-program Interim Progress Reviews (IPRs). ***FY 2017 Base Plans:*** Increase due to conducting cross program systems engineering, requirements analysis and definition, software corrections, testing and data analysis to provide functional improvements in the following area: - Correct High Priority Interoperability Computer Program Correction Records (CPCR)specific to IFF Mode 5 & S Conduct cross-program Interim Progress Reviews (IPRs). ***FY 2017 OCO Plans:*** N/A	0.000 -	1.000 -	4.727 -	0.000 -	4.727 -
Title: AEGIS BASELINE 7.2A/B ***Articles:***	6.400 -	6.800 -	0.000 -	0.000 -	0.000 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
FY 2015 Accomplishments: Performed BL 7.2A installation on lead ship. Performed installations on first two BL 7.2B ships. Supported Lead Ship underway assessment and provided Computer Program updates as required to address Combat System issues identified during initial installations and underway assessment events. Initiated development of follow-on BL 7.2.1 Computer Program Maintenance (CPM) load. ***FY 2016 Plans:*** Support ship installations and provide BL 7.2.1 Computer Program Maintenance update to address open priority issues identified during deployment workups in order to improve the Combat Systems Operational effectiveness. ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Title: AEGIS BL 5.3 SEARAM INTEGRATION & TEST ***Articles:*** ***FY 2015 Accomplishments:*** Provided Engineering support to plan and execute testing and integration efforts required to support the Integration of SEARAM with the AEGIS BL 5.3.8 Combat System. Funding required to support AEGIS Integration Test event execution. ***FY 2016 Plans:*** Provide engineering support to complete integration and test of SEARAM on Forward Deployed Naval Forces (FDNF) AEGIS DDGs. Complete System Qualification Testing, Combat System Certification Panel (CSCP), Software System Safety Technical Review Panel (SSSTRP), and Weapon System Explosive Safety Review Board (WSESRB) to support the integration, testing and certification of the AEGIS Combat System and Computer Program. Conduct Test Readiness Reviews (TRRs), initial ship installation and Combat System Ship Qualification Test (CSSQT). ***FY 2017 Base Plans:*** Complete ship installations ***FY 2017 OCO Plans:***	2.000 -	13.000 -	3.000 -	0.000 -	3.000 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Title: TECHNOLOGY INSERTION 12	0.404	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Continued systems engineering support to ACB12 developed and integrated capabilities.					
FY 2016 Plans: N/A					
FY 2017 Base Plans: N/A					
FY 2017 OCO Plans: N/A					
Title: ADVANCED CAPABILITY BUILD 12 (BL 9.A0 / 9.C0)	5.722	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Completed certification of BL 9A.0. Continued management and coordination efforts to support BL 9.C0 (Destroyers) at-sea testing and combat system certification. Ensured that ships receive required computer program updates to address radar video, voice communication and controls, console stability and general display stability issues. Completed BL 9C.0 certification.					
FY 2016 Plans: N/A					
FY 2017 Base Plans: N/A					
FY 2017 OCO Plans: N/A					
Title: ADVANCED CAPABILITY BUILD 12 (BL 9.C1)	18.000	18.218	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2015 Accomplishments:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Continued engineering support to AEGIS ACB 12 (BL 9.C1) to integrate BMD 5.0 CU programs for Joint Assessment of Maintainability (JAM), SSSTRP and WSESRB. Conducted Engineering Assessment, At-Sea testing and Navy Link Certification testing in order to provide Objective Quality Evidence (OQE) toward BL 9.C1 certification. Implemented Computer Program updates to support computer program installation for AEGIS Light-Off (ALO) on DDG 113 and 115, and AEGIS Combat System (ACS) element integration. ***FY 2016 Plans:*** Complete initial certification of BL 9.C1 in support of modernized DDGs. Support combat system element changes from PARMs for future ships (DDG 57, 61, 69), including SEWIP Blk II and Consolidated Afloat and Enterprise Service (CANES), and certify these configurations in a follow-on combat system certification effort. Support test event planning and execution for Agile Prism and Surface Warfare test events in NOV 2015 and SM-6 Follow-on Operational Test & Evaluation (FOT&E) events in JAN 2016. For any issues found during events or during land-based testing, investigate issues, fix and if needed deliver critical emergent updates for follow-on events. Support shipboard Sea Trials for DDG 51, 113, 115, 57, 69. Support CSSQT for DDG 51. Conduct authorization efforts for new construction DDGs to support sea trials. Support NIFC-CA Collateral Tactical Demonstration (TACDEMO) test event, including computer program and safety authorization efforts and post-event certification efforts. Support Operational Test events including Cyber security (OCT 2015), Maintenance Demonstration (FEB 2016) and at-sea tracking and live fire events (MAR 2016). ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Title: ADVANCED CAPABILITY BUILD 12 (BL 9.A1)	2.000	53.943	12.666	0.000	12.666
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Provided system engineering, development, integration and test support to implement AEGIS BL 9.A1 Combat System capability (NIFC-CA with SM-6, Agile Prism, Agile Storm & Low Slow Flyer (LSF)) using the existing TI 08 Hardware Configuration currently installed in CG 52-58 and LBTS. Provided Computer Program corrections to the AEGIS Common Source Library (CSL). Provided System Engineering, Requirements Definition, Integration and Test support to complete In-Progress Review (IPR) #1. Identified hardware changes required to update LBTS hardware (Combat System Engineering Development Site (CSEDS)/ Surface Combat System Center (SCSC) / AEGIS Training Readiness Center (ATRC) in support of FY16 Milestones. Began					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
developmental efforts to modify the B/L 9 AWS to accommodate the SPY-1A radar. These efforts were funded by FY 2014 Above Threshold Re-Programming (ATR) funds. FY15 CG Modernization Ship Modernization, Operation and Sustainment Funding (SMOSF) initiated engineering feasibility studies in support of CG Modernization (CG 63-73). ***FY 2016 Plans:*** Provide system engineering, development, integration and test support to implement AEGIS BL 9.A1. Support Land Based Test Site hardware updates. Conduct Computer Program Development efforts as a unique effort and then merge the code base with the AEGIS Common Source Library. Conduct System Level testing to validate Combat System requirements and support Combat System Certification process of generating Objective Quality Evidence (OQE). Provide System Engineering, Requirements Definition, Integration and Test support to complete In-Progress Review (IPR) #2 and the Engineering Evaluation of the upgraded B/L. ***FY 2017 Base Plans:*** Provide system engineering, development, integration and test support to test and certify AEGIS BL 9.A1. Support Land Based Test Site hardware update at Surface Combat System Center (SCSC). Conduct Computer Program certification efforts as part of the larger AEGIS Weapon System certification process. Support ship installations and provide Computer Program updates to address issues identified during certification assessments in order to improve the Combat Systems operational effectiveness. Procure and begin installation of upgraded hardware in CG 52 through 58. ***FY 2017 OCO Plans:*** N/A					
Title: ADVANCED CAPABILITY BUILD 16 / TECHNOLOGY INSERTION 16 (BL 9.C2)	62.784	84.102	59.485	0.000	59.485
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Provided program management, system engineering, development and test, and procurement activities to support the AEGIS ACB 16 (BL 9.C2) program development. Conducted AEGIS BL 9.C2 Preliminary Design Review (PDR). Continued development of TI-16 Hardware configuration and executed Operating Environment (OE) development. Commenced TI-16 hardware Environmental Qualification Testing (EQT) and updated Technical Data Packages (TDPs). Developed allocated baseline subsystem, hardware, and interface specifications. Developed AEGIS BL					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
9.C2 Computer Program Build 1. Conducted TI 16 Common Display System (CDS) Preliminary Design Review (PDR) and Critical Design Review (CDR). ***FY 2016 Plans:*** Provide program management, system engineering, development and test, and procurement activities with limited government oversight to support the AEGIS ACB 16 (BL 9.C2) Capability Package (CP) 1 and 2 program development. In support of AEGIS BL 9.C2 CP 1 on TI12, conduct two Software Increment Reviews (SWIRs). Continue development and testing of computer program. Merge code with Common Source Library Mainline at Build 21.A with BMD 5.1. Complete installation on USS JOHN PAUL JONES (DDG 53) and support authorization efforts for At-Sea test event in Q4. Continue Development, Integration and Test of NIFC-CA and SEWIP Capabilities. ***FY 2017 Base Plans:*** Provide program management, system engineering, development and test, and procurement activities with limited government oversight to support the AEGIS ACB 16 (BL 9.C2) CP 1 and CP 2 program development. Complete development and testing of AEGIS BL 9.C2 CP1 Build 24. Support authorization efforts for At-Sea test events in Q2 and Q4. Conduct two Demos to demonstrate the full breadth of functionality and mitigate risk of test completion prior to certification. Continue development and testing of AEGIS BL 9.C2 CP 2 on TI12H and TI16. Conduct IPR #2 and #3.Merge code with Common Source Library Mainline at Build 24A. ***FY 2017 OCO Plans:*** N/A					
Title: ADVANCED CAPABILITY BUILD 20 / TECHNOLOGY INSERTION 20	41.938	138.804	115.978	0.000	115.978
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Provided system engineering support to develop the Combat System Interface Support Equipment (CS ISE) design artifacts, including A-Spec requirements, System/Sub-System Design Description (SSDD), B-1 system requirements, select B5 sub-system requirements, Combat System Early Integration Plan (CSEIP), and continued to develop the SPY-6 Advance Missile Defense Radar (AMDR) External Interface Requirement Specification (IRS) and Interface Design Description (IDD) for the CS ISE. Executed CS ISE SFR and Preliminary Design Review (PDR). Began developing CS ISE Computer Program Build 1 and initiated desktop testing. Provided system engineering support to complete ACB 20 Naval Capabilities Document (NCD) including all capabilities identified in the final R3B letter signed 03 March 2015 in support of final approval in Q1FY16 Continued to evaluate early Combat System Integration and Test strategies to support SPY-6 Milestone					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
C. Provided system engineering support to the execution of SPY-6 Hardware/Software (HW/SW) Critical Design Review (CDR) and SPY-6 computer program development. Provided management, engineering and test support for the planning and execution of land based testing at Advanced Radar Detection Laboratory (ARDEL) to include Combat System Interface Support Equipment (CS ISE) development, maintenance and operations. Conducted ACB 20 IPR #1and established initial baseline development plan in alignment with Flight III fielding.					
FY 2016 Plans: In support of DDG FLT III with AMDR, provide system engineering to finalize all B-1 system and B-5 sub-system requirement specifications, update the Interface Requirement Specification (IRS) and Interface Design Description (IDD) to execute CS ISE Critical Design Review (CDR). Complete CS ISE Computer Program Builds 1-3 and begin developing Computer Program Build 4. Complete CS ISE desktop testing and execute CS ISE Developmental Testing (DT) phase 1. Begin executing CS ISE DT phase 2. Execute two Joint Test Program Reviews (JTPRs) to verify status and alignment between all programs participating in SPY-6 Milestone C testing. Conduct ACB 20 IPR #2 to provide insight to the approved NCD capabilities and expected performance. Provide system engineering to complete artifacts to execute TI Next Systems Requirements Review (SRR) and ACB 20 Phase 0 SRR/System Functional Review (SFR). Support development of BMD 6 artifacts and execution of BMD 6 SRR. Provide system engineering to the execution of SPY-6 Integration & Testing. Continue to provide management, engineering and test support for the planning and execution of land based testing at Advanced Radar Detection Laboratory (ARDEL) to include CS ISE development, maintenance and operations. Provide systems engineering to support completion of Flight III ship design, including required updates to TI 16 in support of the lead Flight III ships, and conduct TI 16 (Flight III) IPR #1 to review required updates.					
FY 2017 Base Plans: Complete development of Combat System Interface Support Equipment (CS ISE) Builds 4 & 5 and complete CS ISE Developmental Testing (DT) phase 2. Participate in SPY-6 DT-3 test planning and analysis process. Prepare Test Plans and conduct CS ISE Combat System Integration Test (CIT) Test Readiness Reviews (TRRs) for CIT events 1 & 2. Execute CIT-1 at developer site with CS ISE and SPY-6 emulator, and execute CIT-2 at the Advanced Radar Detection Laboratory (ARDEL) at PMRF with CS ISE and SPY-6 EDM Conduct post event analysis and provide reporting to support the SPY-6 Milestone C decision. Support development of BMD 6 artifacts and execution of BMD 6 SFR. Update Technical Data Packages (TDPs) for TI 16 in support of Flight III fielding. Complete systems engineering to develop artifacts and execute the TI Next Preliminary Design Review (PDR). Complete systems engineering to develop artifacts for the ACB 20/BMD 6 PDR and TI Next Critical Design Review (CDR). Complete ACB 20 Modeling and Simulation required for performance analysis in support					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604307N / *Surface Combatant Cmbt Sys Eng*	**Project (Number/Name)** 1447 / *Surf Combatant Combat System Imp*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
of the ACB 20 design. Support Mk 160 Guns Control System (GCS) and Cooperative Engagement Capability (CEC) SRRs. ***FY 2017 OCO Plans:*** N/A					
Title: AEGIS BL 5.3.X UPGRADE ***Articles:*** ***FY 2015 Accomplishments:*** N/A ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** Increase due to initial effort. Provide engineering support to AEGIS Baseline (BL) 5.3.X efforts to field a single Combat System, BL5.3.X. BMD BL 4.1 and AEGIS Weapon System (AWS) BL 5.3.9 will be merged into one single computer program, BL 5.3.X, enabling a near simultaneous shift from AAW to BMD. This effort provides system engineering analysis to develop SW upgrades to the AEGIS Weapon System computer program which will enhance warfighting capability. AEGIS B/L 5.3.X is planned for fielding on Flight I/II DDGs allowing these ships to remain relevant through their Expected Service Life (ESL). Update system performance requirements based upon the improved capabilities of the new AWS. Generate development, test and certification schedules in support of fielding plans. Provide engineering support for a joint Missile Defense Agency (MDA)/ United State Navy (USN) System Design Review (SDR) / Preliminary Design Review (PDR). ***FY 2017 OCO Plans:*** N/A	0.000 -	0.000 -	31.400 -	0.000 -	31.400 -
Title: TASK FORCE CYBER AWAKENING ***Articles:*** ***FY 2015 Accomplishments:*** N/A ***FY 2016 Plans:*** Initiate development and integration of cybersecurity capabilities into all phases of the AEGIS Combat System of systems engineering process in order to detect and protect against cyber-attacks, enable operators to react	0.000 -	13.955 -	11.910 -	0.000 -	11.910 -

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
to prevent damage and restore combat capability within an acceptable timeframe. Conduct Combat System Engineering to map interconnections, ports, protocols, interfaces and vulnerabilities that will characterize potential attack vectors, inform design decisions, and guide migration to CYBERSAFE specified criticality focused enclave architectures. Conduct combat system testing to evaluate legacy vulnerabilities and identify gaps to inform analysis of alternatives, design, develop, test, and integration of cybersecurity solutions. Initiate the development of Boundary Defense Capability (Firewall, Intrusion Detection System, External Cross Domain Solutions, Bulk Data Transfer Services), Centralized Cybersecurity Capabilities (Router/Switch, Internal Cross Domain Solutions, Host Based Intrusion Detection, Anti-Virus Management, Security Information and Event Manager, and Certificate Management), and Element System Capabilities (Networks, Hosts, Applications, Data in Transit, Data at Rest, Removable Media Control). Conduct cyber security hardware, software, and appliance trade studies to establish preliminary hardware design and logistics package development. ***FY 2017 Base Plans:*** Continue planning and preliminary design efforts using vulnerabilities and threats identified in FY16 to inform analysis of alternatives leading to final design. Consolidate findings of FY16 testing and system mapping to inform ongoing design and development decisions. Continue FY16 engineering effort to migrate combat system to CYBERSAFE specified criticality focused enclave architectures. Continue development leading to final design of Boundary Defense Capability (Firewall, Intrusion Detection System, External Cross Domain Solutions, Bulk Data Transfer Services), Centralized Cybersecurity Capabilities (Router/Switch, Internal Cross Domain Solutions, Host Based Intrusion Detection, Anti-Virus Management, Security Information and Event Manager, and Certificate Management), and Element System Capabilities (Networks, Hosts, Applications, Data in Transit, Data at Rest, Removable Media Control). Integrate IA Toolkit into baseline combat system security software. Finalize cyber security hardware, software, and appliance trade studies to establish hardware design. Develop logistics documentation and training material. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	169.663	371.899	272.306	0.000	272.306

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• R&D 0604501N: *Multi Mission Signal Processor*	9.372	13.432	2.279	-	2.279	2.424	2.503	2.567	2.856	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604307N / *Surface Combatant Cmbt Sys Eng*	**Project (Number/Name)** 1447 / *Surf Combatant Combat System Imp*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SCN 2122: *DDG 51*	2,924.381	4,207.664	3,227.251	-	3,227.251	3,532.909	3,545.913	3,595.403	3,665.113	3,736.315	98,562.978
• OPN 0900: *DDG Modernization*	324.219	421.195	367.766	-	367.766	636.893	585.026	585.003	658.303	4,517.590	9,611.783
• R&D 0604378N PU 3159: *NIFC-CA*	14.903	23.695	25.750	-	25.750	27.359	29.092	25.767	25.694	Continuing	Continuing
• OPN 5231: *Ship Missile Support Equipment (AEGIS Support Equipment)*	143.570	276.503	320.446	-	320.446	302.644	255.402	247.983	269.126	Continuing	Continuing
• SCN/5110: *Outfitting/Post Delivery*	474.629	613.758	666.158	-	666.158	580.625	587.932	578.393	563.368	619.001	5,198.906

Remarks

D. Acquisition Strategy

Combat system improvements are implemented in baselines as described in the project mission statement. After the combat system is completed and tested, the computer program and associated equipment are delivered to the new construction shipbuilders and modernization shipyards where the computer program and equipment are installed and tested along with all other elements of the shipboard combat system and associated combat support systems. The computer program is a Government Furnished Computer Program (GFCP) deliverable to the Production Test Center for equipment test and check out. Future Combat System deliveries will be provided in Advanced Capability Builds (ACBs) and Technology Insertions (TIs) using the Combat System Engineering Agent (CSEA) contract. Additional modifications to the existing contracts will address B/L 9 completion (new construction), ACB 16 additional warfighting improvements, and ACB 20 engineering development efforts related to DDG FLT III, as approved by OPNAV.

E. Performance Metrics

Combat system development efforts will complete major development milestones.
Major Milestones for ACB 12 (BL 9.A0/9.C0):
Completed BL 9.A0 Combat System Certification Panel second quarter of FY15.
Completed BL 9.C1 Combat System Certification Panel first quarter of FY16.

Major Milestones for ACB 12 (BL 9.C1):
Completed Engineering Assessment in first quarter of FY15.
Completed BL 9.C1 Combat System Certification Panel first quarter of FY16.
DDG 113 / 115 Sea Trials A/B/C second-fourth quarters of FY16.

Major Milestones for ACB 12 (BL 9.A1):
Completed In-Progress Review (IPR) #1 fourth quarter of FY15.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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LBTS Upgrades third quarter FY16.
In-Progress Review (IPR) #2 second quarter of FY17.
BL 9.A1 Combat System Certification Panel third quarter of FY18.

Major Milestones for ACB 16 (BL 9.C2):
Completed ACB 16 Preliminary Design Review (PDR) first quarter FY15.
Completed ACB 16 Software Increment Review (SWIR) #1 third quarter FY15.
Completed ACB 16 Delta System Requirements Review (SRR) third quarter FY15.
Completed ACB 16 Delta System Functional Review (SFR) third quarter FY15.
Completed ACB 16 Software Increment Review (SWIR) #2 fourth quarter FY15.
ACB 16 In Progress Review (IPR) #1 Third quarter FY16.
ACB16 In Progress Review (IPR) #2 first quarter FY17.
ACB16 In Progress Review (IPR) #3 third quarter FY17.
ACB16 In Progress Review (IPR) #4 first quarter FY18.
ACB 16 BL 9.C2.0 Combat System Certification Panel (CSCP) TI12 Configuration third quarter FY18.
ACB16 In Progress Review (IPR) #5 third quarter FY18.
ACB16 In Progress Review (IPR) #6 first quarter FY19.
ACB16 In Progress Review (IPR) #7 third quarter FY19.
ACB 16 BL 9.C2.0 Combat System Certification Panel (CSCP) TI12H Configuration fourth quarter FY19.
ACB 16 BL 9.C2.1 Combat System Certification Panel (CSCP) TI16 Configuration fourth quarter FY20.

Major Milestones for ACB 20 / TI 20:
Completed Combat System Interface Support Equipment System Functional Review (SFR) first quarter FY15.
Completed Combat System Interface Support Equipment Preliminary Design Review (PDR) third quarter FY15.
Combat System Interface Support Equipment Critical Design Review (CDR) second quarter FY16.
ACB 20 System Requirements Review (SRR) fourth quarter FY16.
ACB 20 System Functional Review (SFR) fourth quarter FY16.
Combat System Interface Support Equipment Combat Interface Test (CIT) #1 second quarter FY17.
Combat System Interface Support Equipment Delivery third quarter FY17.
Combat System Interface Support Equipment Combat Interface Test (CIT) #2 fourth quarter FY17.
ACB 20 Preliminary Design Review (PDR) first quarter FY18.
ACB 20 Critical Design Review (CDR) second quarter FY19.
ACB 20 Test Readiness Review (TRR) first quarter FY21.
ACB 20 Demonstration Test (DEMO) second quarter FY21.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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Major Milestones for AEGIS Baseline 7.2 (formerly 7.1R Backfit):
Completed Lead Ship Installation from fourth quarter FY14 through second quarter FY15.
Completed Combat System Certification Panel BL 7.2.1 third quarter FY15.

Major Milestones for Far Term Interoperability Improvement Plan (FTIIP):
Kickoff third quarter FY16.
In-Progress Review (IPR) #1 fourth quarter FY16.
In-Progress Review (IPR) #2 fourth quarter FY17.
Multi-Site Interoperability Development and Certification Testing Event #1 first quarter FY18.
In-Progress Review (IPR) #3 fourth quarter FY18.
Multi-Site Interoperability Development and Certification Testing Event #2 first quarter FY19.
In-Progress Review (IPR) #4 fourth quarter FY19.
Combat System Certification Panel (CSCP) first quarter FY20.

Major Milestones for AEGIS BL 5.3 SEARAM Integration:
In Progress Review (IPR) #1 second quarter FY16.
Test Readiness Review (TRR) second quarter FY16.
Underway Testing third quarter FY16 to second quarter FY17.
Major Milestones for AEGIS BL 5.3.X Upgrade (LNA):
Software System Design Review (SDR) third quarter FY17.
Software Preliminary Design Review (PDR) third quarter FY17.
Software Critical Design Review (CDR) second quarter FY18.
Software Test Readiness Review (TRR) third quarter FY18.
Software Engineering Assessment second quarter of FY19.
Hardware System Requirements Review second quarter FY19.
Software Combat System Certification Panel (CSCP) fourth quarter FY19.
Hardware System Design Review (SDR) second quarter FY20.
Hardware Preliminary Design Review (PDR) second quarter FY20.
Hardware Critical Design Review (CDR) second quarter FY21.
Hardware Test Readiness Review (TRR) third quarter FY21.

Major Milestones for Task Force Cyber Awakening (TFCA):
Task Force Cyber Awakening Kick Off in second quarter FY16.
In-Progress Review (IPR) #1 fourth quarter FY16.
In-Progress Review (IPR) #2 second quarter FY17.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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In-Progress Review (IPR) #3 fourth quarter FY17.
In-Progress Review (IPR) #4 second quarter FY18.
In-Progress Review (IPR) #5 fourth quarter FY18.
In-Progress Review (IPR) #6 second quarter FY19.
In-Progress Review (IPR) #7 fourth quarter FY19.
In-Progress Review (IPR) #8 second quarter FY20.
In-Progress Review (IPR) #9 fourth quarter FY20.
In-Progress Review (IPR) #10 second quarter FY21.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPIF	Lockheed Martin : Moorestown, NJ	2,075.214	97.159	Oct 2014	256.246	Oct 2015	185.322	Oct 2016	-		185.322	Continuing	Continuing	Continuing
Systems Engineering	SS/CPFF	APL : Baltimore, MD	68.217	7.398	Oct 2014	11.155	Oct 2015	13.892	Oct 2016	-		13.892	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Dahlgren, VA	379.944	29.816	Oct 2014	35.458	Oct 2015	36.247	Oct 2016	-		36.247	Continuing	Continuing	Continuing
Systems Engineering	SS/CPAF	BAE Systems : Rockville, MD	48.665	3.237	Oct 2014	4.968	Oct 2015	5.263	Oct 2016	-		5.263	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Port Hueneme, CA	70.224	4.941	Oct 2014	6.290	Oct 2015	7.846	Oct 2016	-		7.846	Continuing	Continuing	Continuing
Systems Engineering	WR	NWAS : Corona, CA	31.066	0.866	Oct 2014	2.950	Oct 2015	3.168	Oct 2016	-		3.168	Continuing	Continuing	Continuing
Systems Engineering	WR	SPAWAR : San Diego, CA	11.377	0.615	Oct 2014	0.315	Oct 2015	0.625	Oct 2016	-		0.625	Continuing	Continuing	Continuing
Systems Engineering	WR	Various : Various	141.440	13.355	Oct 2014	11.621	Oct 2015	10.879	Oct 2016	-		10.879	Continuing	Continuing	Continuing
Award fees	SS/CPAF	Lockheed Martin : Moorestown, NJ	232.817	6.432	Oct 2014	34.845	Oct 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Award fees	SS/CPAF	BAE Systems : Rockville, MD	2.479	0.124	Oct 2014	1.250	Oct 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Award fees	SS/CPAF	Alion Science : Washington DC	2.134	0.000	Oct 2014	0.786	Oct 2015	0.000		-		0.000	0.000	2.920	-
Award fees	WR	Various : Various	8.796	0.433	Oct 2014	0.251	Oct 2015	0.261	Oct 2016	-		0.261	Continuing	Continuing	Continuing
		Subtotal	3,072.373	164.376		366.135		263.503		-		263.503	-	-	-

Remarks

Various Performing Activities consist of multiple performing activities with funding for each no greater than $1 million per year. These larger performing activities include CDSA Dam Neck and NSWC/Crane.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	Department of Interior : Boise, Idaho	40.718	0.830	Oct 2014	0.950	Oct 2015	1.281	Oct 2016	-		1.281	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	NAVAIR : Pax River, MD	13.776	0.587	Oct 2014	0.987	Oct 2015	1.522	Oct 2016	-		1.522	Continuing	Continuing	Continuing
Test and Evaluation	Various	PMRF : Hawaii, HI	0.000	0.000		0.000		2.500	Oct 2016	-		2.500	0.000	2.500	-
		Subtotal	54.494	1.417		1.937		5.303		-		5.303	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	SS/CPAF	Alion Science : Washington DC	27.760	1.451	Oct 2014	0.962	Oct 2015	1.264	Oct 2016	-		1.264	Continuing	Continuing	Continuing
Program Management Support	SS/CPAF	SAIC : Mclean, VA	15.518	2.419	Oct 2014	1.965	Oct 2015	2.236	Oct 2016	-		2.236	Continuing	Continuing	Continuing
DAWDF	Various	Various : Various	0.907	0.000		0.900	Oct 2015	0.000	Oct 2016	-		0.000	0.000	1.807	-
		Subtotal	44.185	3.870		3.827		3.500		-		3.500	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,171.052	169.663		371.899		272.306		-		272.306	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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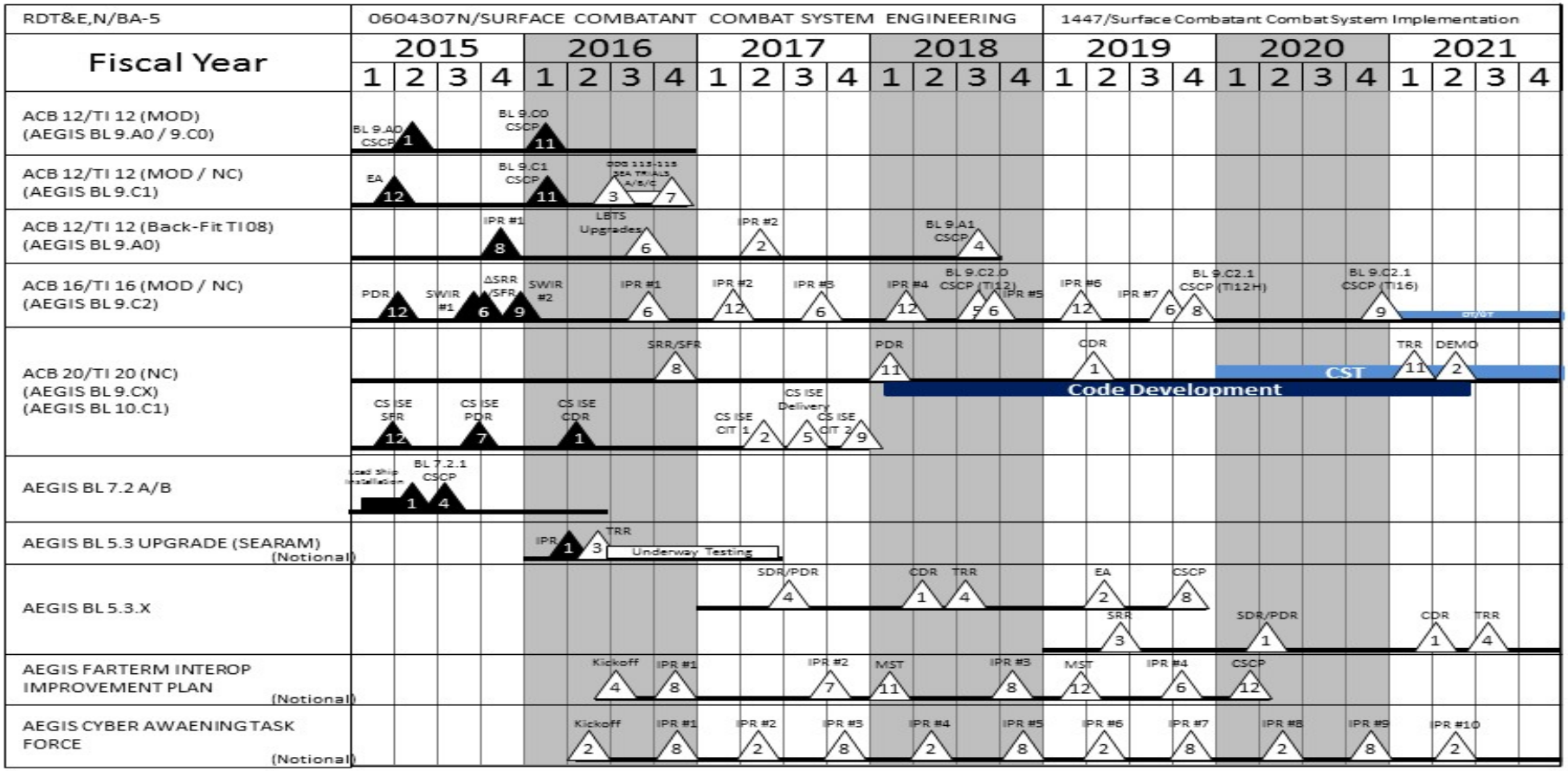

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1447				
ADVANCE CAPABILITY BUILD 12 (BL 9.A0 / 9.C0): ACB 12 (BL 9.A0) COMPUTER PROGRAM CERTIFICATION PANEL	2	2015	2	2015
ADVANCE CAPABILITY BUILD 12 (BL 9.A0 / 9.C0): ACB 12 (BL 9.C0) COMPUTER PROGRAM CERTIFICATION PANEL	1	2016	1	2016
ADVANCE CAPABILITY BUILD 12 (BL 9.C1): ACB 12 (BL 9.C1) ENGINEERING ASSESSMENT	1	2015	1	2015
ADVANCE CAPABILITY BUILD 12 (BL 9.C1): ACB 12 (BL 9.C1) COMPUTER PROGRAM CERTIFICATION PANEL	1	2016	1	2016
ADVANCE CAPABILITY BUILD 12 (BL 9.C1): ACB 12 (BL 9.C1) DDG 113/115 SEA TRIALS A/B/C	2	2016	4	2016
ADVANCED CAPABILITY BUILD 12 (BL 9.A1): ACB 12 (BL 9.A1) IN-PROGRESS REVIEW #1	4	2015	4	2015
ADVANCED CAPABILITY BUILD 12 (BL 9.A1): ACB 12 (BL 9.A1) LAND BASED TEST SITE UPGRADE	3	2016	3	2016
ADVANCED CAPABILITY BUILD 12 (BL 9.A1): ACB 12 (BL 9.A1) IN-PROGRESS REVIEW #2	2	2017	2	2017
ADVANCED CAPABILITY BUILD 12 (BL 9.A1): ACB 12 (BL 9.A1) COMPUTER PROGRAM CERTIFICATION PANEL	3	2018	3	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) PRELIMINARY DESIGN REVIEW	1	2015	1	2015
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) SOFTWARE INCREMENT REVIEW #1	3	2015	3	2015
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) DELTA SYSTEM REQUIREMENTS REVIEW	3	2015	3	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) DELTA SYSTEM FUNCTIONAL REVIEW	3	2015	3	2015
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) SOFTWARE INCREMENT REVIEW #2	4	2015	4	2015
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) IN PROGRESS REVIEW #1	3	2016	3	2016
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) IN PROGRESS REVIEW #2	1	2017	1	2017
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) IN PROGRESS REVIEW #3	3	2017	3	2017
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) IN PROGRESS REVIEW #4	1	2018	1	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2.0) COMBAT SYSTEM CERTIFICATION PANEL (TI12)	3	2018	3	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) IN PROGRESS REVIEW #5	3	2018	3	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) IN PROGRESS REVIEW #6	1	2019	1	2019
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2) IN PROGRESS REVIEW #7	3	2019	3	2019
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2.1) COMBAT SYSTEM CERTIFICATION PANEL (TI12H)	4	2019	4	2019
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2.1) COMBAT SYSTEM CERTIFICATION PANEL (TI16)	4	2020	4	2020
ADVANCED CAPABILITY BUILD 20: CS ISE SYSTEM FUNCTIONAL REVIEW	1	2015	1	2015
ADVANCED CAPABILITY BUILD 20: CS ISE PRELIMINARY DESIGN REVIEW	3	2015	3	2015
ADVANCED CAPABILITY BUILD 20: CS ISE CRITICAL DESIGN REVIEW	2	2016	2	2016
ADVANCED CAPABILITY BUILD 20: ACB 20 SYSTEM REQUIREMENTS REVIEW	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ADVANCED CAPABILITY BUILD 20: ACB 20 SYSTEM FUNCTIONAL REVIEW	4	2016	4	2016
ADVANCED CAPABILITY BUILD 20: CS ISE COMBAT INTERFACE TEST #1	2	2017	2	2017
ADVANCED CAPABILITY BUILD 20: CS ISE DELIVERY	3	2017	3	2017
ADVANCED CAPABILITY BUILD 20: CS ISE COMBAT INTERFACE TEST #2	4	2017	4	2017
ADVANCED CAPABILITY BUILD 20: ACB 20 PRELIMINARY DESIGN REVIEW	1	2018	1	2018
ADVANCED CAPABILITY BUILD 20: ACB 20 CRITICAL DESIGN REVIEW	2	2019	2	2019
ADVANCED CAPABILITY BUILD 20: ACB 20 TEST READINESS REVIEW	1	2021	1	2021
ADVANCED CAPABILITY BUILD 20: ACB 20 DEMONSTRATION	2	2021	2	2021
AEGIS BL 7.2: AEGIS BL 7.2 LEAD SHIP INSTALLATION	1	2015	2	2015
AEGIS BL 7.2: AEGIS BL 7.2.1 COMBAT SYSTEM CERTIFICATION PANEL	3	2015	3	2015
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP KICKOFF	3	2016	3	2016
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #1	3	2016	3	2016
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #2	4	2017	4	2017
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP MULTI SITE TEST EVENT #1	1	2018	1	2018
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #3	4	2018	4	2018
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP MULTI SITE TEST EVENT #2	1	2019	1	2019
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #4	4	2019	4	2019
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: COMBAT SYTEM CERTIFICATION PANEL	1	2020	1	2020
AEGIS BL 5.3.9 SEARAM INT & TEST EFFORT: BL 5.3.9 IN-PROGRESS REVIEW #1	2	2016	2	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604307N / *Surface Combatant Cmbt Sys Eng*	**Project (Number/Name)** 1447 / *Surf Combatant Combat System Imp*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AEGIS BL 5.3.9 SEARAM INT & TEST EFFORT: BL 5.3.9 TEST READINESS REVIEW	2	2016	2	2016
AEGIS BL 5.3.9 SEARAM INT & TEST EFFORT: BL 5.3.9 UNDERWAY TESTING SUPPORT	3	2016	2	2017
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X SOFTWARE SYSTEM DESIGN REVIEW	3	2017	3	2017
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X SOFTWARE PRELIMINARY DESIGN REVIEW	3	2017	3	2017
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X SOFTWARE CRITICAL DESIGN REVIEW	2	2018	2	2018
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X SOFTWARE TEST READINESS REVIEW	3	2018	3	2018
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X SOFTWARE ENGINEERING ASSESSMENT	2	2019	2	2019
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X HARDWARE SYSTEM REQUIREMENTS REVIEW	2	2019	2	2019
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X SOFTWARE COMBAT SYSTEM CERTIFICATION PANEL	4	2019	4	2019
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X HARDWARE SYSTEM DESIGN REVIEW	2	2020	2	2020
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X HARDWARE PRELIMINARY DESIGN REVIEW	2	2020	2	2020
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X HARDWARE CRITICAL DESIGN REVIEW	2	2021	2	2021
AEGIS BL 5.3.X UPGRADE: AEGIS BL 5.3.X HARDWARE TEST READINESS REVIEW	3	2021	3	2021
TASK FORCE CYBER AWAKENING (TFCA): TFCA KICKOFF	2	2016	2	2016
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #1	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604307N / *Surface Combatant Cmbt Sys Eng*	**Project (Number/Name)** 1447 / *Surf Combatant Combat System Imp*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #2	2	2017	2	2017
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #3	4	2017	4	2017
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #4	2	2018	2	2018
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #5	4	2018	4	2018
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #6	2	2019	2	2019
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #7	4	2019	4	2019
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #8	2	2020	2	2020
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #9	4	2020	4	2020
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #10	2	2021	2	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604307N / *Surface Combatant Cmbt Sys Eng*	Project (Number/Name) 3357 / *Aegis Training Improvement Program*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
3357: *Aegis Training Improvement Program*	3.733	8.767	14.677	10.458	-	10.458	7.819	6.574	5.081	5.196	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The AEGIS Training Improvement project provides enhancements and upgrades to the Total Ship Training Capability (TSTC) training components within the combat system to address needs for increased training capability and functionality in conjunction with AEGIS Advanced Capability Builds (ACB). These enhancements will address current and future training requirements by implementing new functionality to enable the individual warfighter through distributed battle group events to engage in more complex training requirements to support fleet required training certification events. Capability Development and integration are related to Integrated Air and Missile Defense, Underwater, Surface, and other warfare areas. Capability enhancements and upgrades include development of re-useable common components that can be leveraged by SSDS MK2 combat systems, and/or integration of re-usable common components developed by the TSTC Battle Force Tactical Trainer (BFTT) Program and Ship Self Defense System (SSDS) MK2 TSTC Training Improvement programs to meet AEGIS combat system training requirements.

TSTC provides realistic joint warfare training across the spectrum of armed conflict, realistic unit level team training in all warfare areas (e.g. NIFC-CA and BMD missions to support IAMD). TSTC provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organization, the Tactical Training Groups and C2F/C3F Fleet Synthetic Trainers (FSTs).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: AEGIS Training Improvement and ACB 16 integration	8.767	14.677	10.458	0.000	10.458
Articles:	-	-	-	-	-
Description: AEGIS Total Ship Training Capability (TSTC) provides enhancements to training components and increase training functionality in conjunction with AEGIS ACB16 development and integration. These enhancements will address current and future training requirements and implement new functionality to support more complex training requirements related to Underwater, Surface and other warfighter upgrades.					
FY 2015 Accomplishments: Continued systems engineering efforts for the development and integration of TSTC capabilities to support improved Integrated Air and Missile Defense (IAMD), Anti-Submarine Warfare (ASW) and Surface Warfare (SUW) training. These systems engineering efforts included requirements development of MH-60R constructive simulation, Identification Friend or Foe (IFF) simulator integration, and Cooperative Engagement Capability					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604307N / *Surface Combatant Cmbt Sys Eng*	**Project (Number/Name)** 3357 / *Aegis Training Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
(CEC) trainer integration and integration of Electronic Warfare (EW) and Anti-Submarine Warfare (ASW) trainer upgrades for AEGIS ACB 16/BL9.C2. Provided system engineering support to training improvement integration within AEGIS ACB16/BL9.C2. Provided Computer Program updates to implement training requirements associated with AEGIS ACB16 Program of Record. Prepared for and support Preliminary Design Review (PDR) and Critical Design Review (CDR) for AEGIS ACB16. Supported integration of Combat System training capabilities. Continued modifications to AEGIS BL 9 to support a NIFC-CA training capability. These modifications are being applied to AEGIS common source library to allow use on earlier AEGIS combat system baselines. ***FY 2016 Plans:*** Continue development, integration and testing of TSTC enhancements and components into AEGIS ACB 16/ BL9.C2. Initiate development of requirements to support TSTC capability improvements to support tactical training requirements of AEGIS ACB 20, to include combat system modifications to support integration of the Air & Missile Defense Radar (AMDR) stimulation capability. Continue to make AEGIS combat system modifications to support migration of TSTC training capability, as components are modernized or new components developed, into a common core system to eliminate redundancies with SSDS. Initiate study to determine method of simulating real world environments within AEGIS shipboard sensors for Anti-Area / Area Denial (A2AD) training. Investigate options to integrate of Full Motion Video capability to provide required realism/fidelity for Surface Warfare Training. ***FY 2017 Base Plans:*** Continue development, integration and testing of TSTC enhancements and components into AEGIS BL9.C2. Finalize requirements to support TSTC capability improvements to support tactical training requirements of AEGIS ACB 20, to include combat system modifications to support integration of the Air & Missile Defense Radar (AMDR) stimulation capability. Continue to make AEGIS combat system modifications to support migration of TSTC training capability, as components are modernized or new components developed, into a common core system to eliminate redundancies with SSDS. Finalize requirements to support simulating real world environments within AEGIS shipboard sensors for Anti-Area / Area Denial (A2AD) training. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.767	14.677	10.458	0.000	10.458

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0204571N/1427: *Surface Tactical Team Trainer (STTT)*	16.366	9.954	12.891	-	12.891	10.761	9.628	9.864	10.081	Continuing	Continuing

Remarks

D. Acquisition Strategy

Efforts will be completed on various contracts to support requirements updates to multiple products that will support Training Integration and Implementation within AEGIS ACB16.

E. Performance Metrics

Training Improvement Program efforts will complete major development milestones.
Major Milestones for ACB 16 (BL 9.C2):
Completed ACB 16 Preliminary Design Review (PDR) first quarter FY15.
Completed ACB 16 Software Increment Review (SWIR) #1 third quarter FY15.
Completed ACB 16 Delta System Requirements Review (SRR) third quarter FY15.
Completed ACB 16 Delta System Functional Review (SFR) third quarter FY15.
Completed ACB 16 Software Increment Review (SWIR) #2 fourth quarter FY15.
ACB 16 In Progress Review (IPR) #1 Third quarter FY16.
ACB16 In Progress Review (IPR) #2 first quarter FY17.
ACB16 In Progress Review (IPR) #3 third quarter FY17.
ACB16 In Progress Review (IPR) #4 first quarter FY18.
ACB 16 BL 9.C2.0 Combat System Certification Panel (CSCP) TI12 Configuration third quarter FY18.
ACB16 In Progress Review (IPR) #5 third quarter FY18.
ACB16 In Progress Review (IPR) #6 first quarter FY19.
ACB16 In Progress Review (IPR) #7 third quarter FY19.
ACB 16 BL 9.C2.0 Combat System Certification Panel (CSCP) TI12H Configuration fourth quarter FY19.
ACB 16 BL 9.C2.1 Combat System Certification Panel (CSCP) TI16 Configuration fourth quarter FY20.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	Various	Various : Various	1.956	3.819	Oct 2014	8.464	Oct 2015	3.347	Oct 2016	-		3.347	Continuing	Continuing	Continuing
		Subtotal	1.956	3.819		8.464		3.347		-		3.347	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	Various	Various : Various	1.497	4.380	Oct 2014	5.564	Oct 2015	6.529	Oct 2016	-		6.529	Continuing	Continuing	Continuing
		Subtotal	1.497	4.380		5.564		6.529		-		6.529	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	C/CPAF	SAIC : McLean VA.	0.200	0.406	Oct 2014	0.460	Nov 2015	0.582	Oct 2016	-		0.582	Continuing	Continuing	Continuing
Professional Support	C/CPAF	TMB : Washington DC	0.080	0.162	Oct 2014	0.189	Oct 2015	0.000	Oct 2016	-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.280	0.568		0.649		0.582		-		0.582	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.733	8.767		14.677		10.458		-		10.458	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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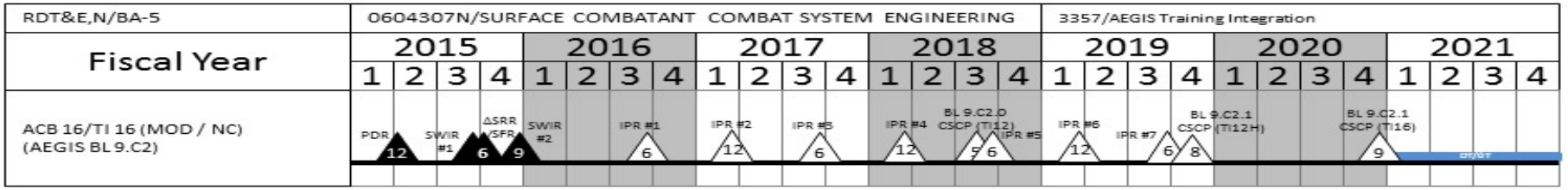

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3357				
ACB16 BL 9.C2: Preliminary Design Review	1	2015	1	2015
ACB16 BL 9.C2: Software Increment Review #1	3	2015	3	2015
ACB16 BL 9.C2: Delta System Requirements Review	3	2015	3	2015
ACB16 BL 9.C2: Delta System Functional Review	3	2015	3	2015
ACB16 BL 9.C2: Software Increment Review #2	4	2015	4	2015
ACB16 BL 9.C2: In Progress Review #1	3	2016	3	2016
ACB16 BL 9.C2: In Progress Review #2	1	2017	1	2017
ACB16 BL 9.C2: In Progress Review #3	3	2017	3	2017
ACB16 BL 9.C2: In Progress Review #4	1	2018	1	2018
ACB16 BL 9.C2: Combat System Certification Panel (TI12)	3	2018	3	2018
ACB16 BL 9.C2: In Progress Review #5	3	2018	3	2018
ACB16 BL 9.C2: In Progress Review #6	1	2019	1	2019
ACB16 BL 9.C2: In Progress Review #7	3	2019	3	2019
ACB16 BL 9.C2: Combat System Certification Panel (TI12H)	4	2019	4	2019
ACB16 BL 9.C2: Combat System Certification Panel (TI16)	4	2020	4	2020