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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	3,783.665	288.678	390.238	397.403	-	397.403	343.636	309.212	279.764	284.083	Continuing	Continuing
1447: Surf Combatant Combat System Imp	3,756.541	275.421	382.382	390.457	-	390.457	335.773	301.446	273.360	278.609	Continuing	Continuing
3357: Aegis Training Improvement Program	27.124	10.355	7.856	6.946	-	6.946	7.863	7.766	6.404	5.474	Continuing	Continuing
9999: Congressional Adds	0.000	2.902	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.902
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 180												
A. Mission Description and Budget Item Justification												
The FY 2019 funding request was reduced by \$39.750 million in Surface Combatant Combat System Improvement and \$1.1 million in AEGIS Training Improvement Program to account for the availability of prior year execution balances.												
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total				
Previous President's Budget				282.764	390.238	419.478	-	419.478				
Current President's Budget				288.678	390.238	397.403	-	397.403				
Total Adjustments				5.914	0.000	-22.075	-	-22.075				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-							
• Congressional Rescissions				-	-							
• Congressional Adds				-	-							
• Congressional Directed Transfers				-	-							
• Reprogrammings				20.500	0.000							
• SBIR/STTR Transfer				-7.578	0.000							
• Program Adjustments				0.000	0.000	-16.962	-	-16.962				
• Rate/Misc Adjustments				0.000	0.000	-5.113	-	-5.113				
• Congressional General Reductions Adjustments				-0.008	-	-	-	-				

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• Congressional Directed Reductions			-10.000	-	-	-
Adjustments						
• Congressional Add Adjustments			3.000	-	-	-
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 9999: Congressional Adds						
Congressional Add: Small Business Technology Insertion						
						FY 2017
						FY 2018
						2.902
						0.000
Congressional Add Subtotals for Project: 9999						2.902
						0.000
Congressional Add Totals for all Projects						2.902
						0.000
Change Summary Explanation						
FY19 1447/3357:						
Added \$23.564M Increase for Combat System Test Bed (CSTB). CSTB will enable the Navy to characterize end-to-end, system-of-systems Integrated Air and Missile Defense Hard Kill (HK)/Soft Kill (SK) performance.						
The FY 2019 funding request was reduced by \$39.750 million in Surface Combatant Combat System Improvement and \$1.1 million in AEGIS Training Improvement Program to account for the availability of prior year execution balances.						

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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			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
1447: Surf Combatant Combat System Imp	3,756.541	275.421	382.382	390.457	-	390.457	335.773	301.446	273.360	278.609	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 180												
A. Mission Description and Budget Item Justification												
<p>This project provides AEGIS Cruiser &amp; Destroyer ACS upgrades and integrates new equipment and systems to pace the threat and capture advances in technology. 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, BL 5 on Guided Missile Destroyer (DDG) 51-78, BL 6 on DDG 79-90, BL 7 on DDG 91-112, BL 9 starting with DDG 113 and BL 10 on First Flight III DDG.</p> <p>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 9, consisting of an upgraded computing infrastructure and computer program enhancements, will modernize DDG 51-53, 57, 61, 65 and 69. AEGIS BL 9 will also be introduced on the new construction destroyers, DDG 113-124 and DDG 127. CG 59, 60, and 62 computer programs will also be upgraded, bringing all BL 9 warfighting improvements (with the exception of BMD). BL 9 will provide an updated computer program to BL 8 CGs (CG 52-58), improving warfighter effectiveness by introducing Naval Integrated Fire Control - Counter Air (NIFC-CA), improved SM-6 integration, capabilities to address Fleet Urgent Operational Needs (UONs), and reducing the number of AEGIS Baselines within the Fleet.</p> <p>AEGIS Advanced Capability Build (ACB) 16 and the required Technical Insertions (TI) 12/12H/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. ACB16 will support 3 hardware configurations: PHASE 0 AEGIS BL 9.C2.0 TI12 will support 15 DDGs (51/52/57/61/65/69/80/113-120) and 2 AEGIS ASHORE (AA) facilities (Poland/Romania); PHASE 1 AEGIS BL 9.C2.1 / 9.A2.1 TI12H will support 2 DDGs (79/83) and 7 CGs (63-65/66/68/69/71); and PHASE 2 AEGIS BL 9.C2.2 TI16 will support 12 DDGs (81/84-88/92/94/121-124, 127) and 3 CGs (70/72/73).</p> <p>AEGIS Advanced Capability Build (ACB) 20 and Technical Insertion (TI) 16 will provide critical warfighter upgrades to AEGIS FLT III 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.</p> <p>AEGIS Far Term Interoperability Improvement Plan will address the remaining interoperability issues within fielded AEGIS Combat System configurations to integrate F/A-18 Digital Air Control (Phase 1) in support of F/A-18 and F-35 Joint Strike Fighter initial deployment, integration of the Shipboard Gridlock System/Automatic Correlation (SGS/AC). These updates will be implemented in a phased approach to align with current and future AEGIS development efforts.</p>												

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<p>AEGIS Task Force Cyber Awakening will assess and provide corrective actions to improve AEGIS Combat System Computer Program and Hardware configurations against emerging threats within the Cyber arena. These improvements will be implemented within AEGIS Combat Systems currently under development and include updates to Boundary Defense Components (BDC).</p> <p>AEGIS BL 5.4 combines AEGIS BL 5.3.9 and BMD 4.1 into single AEGIS Computer Program 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.</p> <p>AEGIS IFF MODE 4/5 Integration program will address Mode 4 issues; implement Mode 5 IFF within the Fire Control Loop for All AEGIS Baselines by 2020 to support Urgent fleet demand to support emerging warfighter requirements.</p> <p>Combat Systems Test Bed (CSTB) will address the shortfalls in AEGIS Modeling &amp; Simulation highlighted by DOT&amp;E in BL 7, 8 and 9.1. Combat Systems Test Bed will provide automated analysis to efficiently process large amounts of M&amp;S data. This increased data will allow a deeper understanding of Surface Combatant performance allowing the Program Office to quickly identify gaps and validate solutions to field capabilities faster.</p>						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: AEGIS DEVELOPMENT SUPPORT		25.755	38.270	38.411	0.000	38.411
Articles:		-	-	-	-	-
Description: 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.						
FY 2018 Plans:						
FY 2018 funding supports 7 development efforts at AEGIS Land Based Test Sites, implementing increased functionality to address emergent threats. 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 continues 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 aligning to the 30 year Combat System plan.						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>AEGIS System engineering continues 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 in support to the 30 year Combat System plan.</p> <p>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 FY18 ~4550 hours are planned within budget to support AEGIS BL 5.4, AEGIS BL 5.3.12 Upgrade(IFF), AEGIS BL 6.3 Update (IFF), AEGIS BL 7.2 Update (IFF), AEGIS ACB12 (BL 9.A2), 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).</p> <p><b>FY 2019 Base Plans:</b></p> <p>Funding increases to support an increased number of test hours required at AEGIS Land Based Test Sites to support 7 development efforts implementing increased functionality to address emergent threats, support periodic Software Licenses procurements for AEGIS Land Based Test Development sites, support Future Surface Combatant Engineering studies, and support increased DT/OT testing requirements for Baselines in development.</p> <p>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, AEGIS Development Site Operations and Maintenance, and Future Surface Combatant Engineering studies to support the Future Surface Combatant.</p> <p>The AEGIS TDA continues to evaluate Combat System configurations 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 aligning to the 30 year Combat System plan.</p> <p>AEGIS System engineering continues 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 to align with 30 year Combat System plan.</p>							

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
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 FY19 ~4620 hours are planned within budget to support AEGIS BL 5.4 Upgrade, AEGIS BL 5.3.12 Upgrade (IFF), AEGIS BL 6.3 Update (IFF), AEGIS BL 7.2 Update (IFF), AEGIS BL 9A Update(IFF), AEGIS BL AEGIS ACB16 (9.C2) and AEGIS ACB 20 (BL 10) 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 2019 OCO Plans: N/A						
FY 2018 to FY 2019 Increase/Decrease Statement: Increase to support additional test hours at Land Based Test Sites for 7 AEGIS BL Development efforts.						
Title: FAR TERM INTEROPERABILITY IMPROVEMENT PLAN (FTIIP)		4.727	15.000	15.300	0.000	15.300
Articles:		-	-	-	-	-
FY 2018 Plans: Funding increases to support 5 concurrent code development efforts required to implement Digital Air Control (DAC) improvements within AEGIS BL Development efforts to improve Battlegroup Operations of the AEGIS Weapon System.						
Support System Requirements definition, specification updated, functional allocation within the Combat System components, support code development, unit and system level testing of functionality identified during the FY17 time period. These requirements will be implemented on a number of AEGIS baselines including the following: - BL's under development AEGIS 9.C2, AEGIS ACB20, AEGIS BL 5.4 and fielded configurations AEGIS BL 6.3, AEGIS BL 7.2A/B. Conduct cross-program Interim Progress Reviews (IPRs) #2.						
FY 2019 Base Plans: Funding increases to support 5 concurrent test and evaluation efforts required to implement Digital Air Control (DAC) improvements within AEGIS BL Development efforts to improve Battlegroup Operations of the AEGIS Weapon System.						
Support code development, unit and system level testing of functionality. These requirements will be implemented on a number of AEGIS baselines including the following:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- BL's under development AEGIS 9.C2, AEGIS ACB20, AEGIS BL 5.4 and fielded configurations AEGIS BL 6.3, AEGIS BL 7.2A/B. Conduct cross-program Interim Progress Reviews (IPRs) #2.  <b>FY 2019 OCO Plans:</b> N/A  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Increase required to continue with improvements to the AEGIS Weapons System to improve interoperability within the Strike Groups of deployed units required to support the introduction of F-35 and IFF Mode 5/S data.						
<b>Title:</b> AEGIS BL 5.3 SEARAM INTEGRATION & TEST  <b>FY 2018 Plans:</b> N/A  <b>FY 2019 Base Plans:</b> N/A  <b>FY 2019 OCO Plans:</b> N/A		3.000 Articles: -	0.000 -	0.000 -	0.000 -	0.000 -
<b>Title:</b> ADVANCED CAPABILITY BUILD 12 (BL 9.A2)  <b>FY 2018 Plans:</b> Provide system engineering, development, integration and test support to test and certify AEGIS BL 9.A2. Support Computer Program certification efforts to upgrade BL 8 fielded CGs and BL 9 fielded CG's. Support ship installations and provide Computer Program updates to address issues identified during certification assessments in order to improve the Combat Systems operational effectiveness. Support installation of upgraded hardware in CG52, CG54, CG55, CG56, CG57, CG58, CG63 and CG64.  <b>FY 2019 Base Plans:</b> Funding increases to support underway testing planned in support of Combat System certification for 8 AEGIS CG Modernization configurations.		33.166 Articles: -	39.251 -	43.113 -	0.000 -	43.113 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Provide system engineering, development, integration and test support. Complete Demonstration Testing and Operational Testing as part of the 2-4-6 Cruiser Modernization Plan. Each CG coming out of its lay up period will require a detailed Test and Evaluation plan to evaluate the operational effectiveness of the existing and new combat system configuration installed on the ship. Complete supporting the ship installations and testing requirements for installation started in FY18. Provide Computer Program updates to address issues identified during certification assessments in order to improve the Combat Systems operational effectiveness. Support installation of upgraded hardware in CG 65 and CG 69.  <b>FY 2019 OCO Plans:</b> N/A  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Increase required to continue Cruiser Modernization 2-4-6 plan.						
<b>Title:</b> ADVANCED CAPABILITY BUILD 16 / TECHNOLOGY INSERTION 16 (BL 9.C2)  <b>Articles:</b>		59.485	68.591	31.500	0.000	31.500
<b>FY 2018 Plans:</b> Funding supports 2 concurrent test programs planned in support of AEGIS ACB16 for AEGIS Modernization and New Construction Ships. Provide program management, system engineering, development and test, and procurement activities to support the AEGIS ACB 16 (BL 9.C2) Phase 0, Phase 1 and Phase 2 CP 1 and CP 2 program development. Complete development and testing of AEGIS BL 9.C2.1/9.B2.1 Phase 0 CP2 Build 27. Support authorization efforts for At-Sea test events in Q2 and Q4. Conduct one Demo 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 Phase 2 and TI16 respectively. Merge code with Common Source Library Mainline at Build 27A.  <b>FY 2019 Base Plans:</b> Provide program management, system engineering, development and test, and procurement activities to support the AEGIS ACB 16 (BL 9.C2) Phase 0, Phase 1 and Phase 2 CP 1 and CP 2 program development. Support AEGIS ACB 16 (BL 9.C2) Engineering assessment planned for 2nd quarter FY19. Collect and evaluate Test artifacts to support Combat System Certification planned for 1st quarter FY19.  <b>FY 2019 OCO Plans:</b> N/A  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b>		-	-	-	-	-



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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Funding is required to continue development of AEGIS ACB16 Configurations through certification and support initial underway testing required for Combat System certification testing.						
Title: ADVANCED CAPABILITY BUILD 20 / TECHNOLOGY INSERTION 16/20		115.978	126.475	157.978	0.000	157.978
Articles:		-	-	-	-	-
FY 2018 Plans: AEGIS Baseline 10.0 will demonstrate system design maturity at IPR 1 and IPR 2. Software Incremental Reviews (SWIR) will status the progress of the code and test efforts. SWIR 1 will assess the status of the AEGIS 9.2.2 Baseline of which portions of Baseline 10.0 depends. SWIR 2 will evaluate the first Baseline 10.0 specific build from the CSL, build 28A.						
Modeling and Simulation (M&S) will underpin and validate system design and will be made available for the review teams leading up to the IPR. The integration of the Lockheed Martin MEDUSA M&S program with the Raytheon RAMS M&S program will continue to expand the AEGIS Baseline 10.0 M&S capability. Start Computer Program code development to support integration of all scope identified within the Naval Capabilities Document for New Construction and Modernization configuration. Computer Program development will implement code to address the following scope: SPY-6 Integration, BMD 6.0 Integration, MK-160 Updates, CIWS Sensor Coordination, and Tactical Data Link Updates. The Agile development process utilized by Baseline 10.0 will see capability incremental delivered from a specification and design level to coding and testing. Deliver the CS ISE. Establish the four New Jersey based AEGIS Baseline 10.0 Land Base Test Sites through Initial Test Capability (ITC 1.0). The SPY-6 Engineering Development Module (EDM) will be packed and shipped from ARDEL and flown to Moorestown, NJ. Site preparation at the Combat System Engineering Development Site (CSEDS) will commence in preparation of receipt of the EDM.						
FY 2019 Base Plans: Funding increase required to support continued Code Development and start preliminary Level 1-3 testing to implement the R3B approved requirements within the ACB20 Combat System Computer Program to support DDG FLT III.						
AEGIS Baseline 10.0 will continue to demonstrate system design maturity at IPR 3, and will provide status of progress at Software Increment Review (SWIR) 3, 4, & 5. The EDM will complete shipboard representative installation at CSEDS (ITC 1.3) and powertrain testing will begin as risk reduction to the new ship construction effort. CSL builds 30A, 31A, & 32A will be developed on a CSL development branch.						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Modeling and Simulation (M&S) will underpin and validate system design and will be made available for the review teams leading up to the IPR. The integration of the CSEA MEDUSA M&S program with the AMDR RAMS M&S program will continue to expand the AEGIS Baseline 10.0 M&S capability. Computer Program code development will continue to support integration of all scope identified within the Naval Capabilities Document for New Construction and Modernization configuration. Computer Program development will implement code to address the following scope: SPY-6 Integration, BMD 6.0 Integration, MK-160 Updates, CIWS Sensor Coordination, and Tactical Data Link Updates. The Agile development process utilized by Baseline 10.0 will see capability incrementally delivered from a specification and design level to coding and testing.  <b>FY 2019 OCO Plans:</b> N/A  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Increase required to support Code Development specific to SPY-6 integration, test site equipment, and testing.						
<b>Title:</b> COMBAT SYSTEMS TEST BED (CSTB)  <b>Articles:</b>  <b>Description:</b> Combat Systems Test Bed (CSTB) will address the shortfalls in AEGIS Modeling & Simulation highlighted by DOT&E in BL 7, 8 and 9.1. Combat Systems Test Bed will provide automated analysis to efficiently process large amounts of M&S data. This increased data will allow a deeper understanding of Surface Combatant performance allowing the Program Office to quickly identify gaps and validate solutions to field capabilities faster.  <b>FY 2018 Plans:</b> N/A  <b>FY 2019 Base Plans:</b> CSTB Build 2 will include: (1) At-Sea -Test event planning for ACB 16(BL 9.C2) utilizing AN/SPY-1, Weapons Control System (WCS), Command & Decision (C&D) and ESSM Block 1. (2) Assessment of new AEGIS Speed to Capability (ASToC) capabilities. (3) Analysis of performance deltas between Common Source Library (CSL) builds.  CSTB Build 3 expands on the capabilities delivered in CSTB Build 2, including initial AEGIS Baseline 10 capabilities and the integration of AN/SPY-6, ESSM Block 2, and SLQ-32v(6) models. Build 3 is targeted to		0.000 -	0.000 -	23.564 -	0.000 -	23.564 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
support the ACB 16 Operational Test (OT) Runs for Record, and significant verification and validation (V&V) of the requisite AN/SPY-1, Weapon Control System (WCS), Command & Decision (C&D), ESSM Block 1, and SM-2 Block IIIA/IIIB model capabilities will occur in FY19. In addition to ACB 16 V&V, planning for BL 10.0 V&V will be on-going, culminating in delivery of Developmental Test (DT) and OT Accreditation Plans. Finally, CEC, CIWS, and SM-6 Block I models will continue integration and testing.						
FY 2019 OCO Plans: N/A						
FY 2018 to FY 2019 Increase/Decrease Statement: CSTB will enable the Navy to characterize end-to-end, system-of-systems Integrated Air and Missile Defense Hard Kill/Soft Kill performance.						
Title: AEGIS: FIX MODE 4 / ACCELERATE 5		0.000	28.128	28.691	0.000	28.691
Articles:		-	-	-	-	-
FY 2018 Plans: This effort will start in FY18 and address emergent requirements related to fixing MODE 4 and accelerating the delivery of MODE 5 within Fielded AEGIS Baselines and Development efforts. Start Development of AEGIS Phase I IFF Integration within In-Service Baselines to support Mode 4 Inoculation and implement Mode 5 IFF within the Fire Control Loop and improve Mode 5 Interoperability. Program will be kicked off in 1QFY18 and Phase I IPR #1 will be conducted in 2QFY18 to support the development of Specification Changes (SC) for AEGIS BL 3/5/6/7/8/9 and will trigger Code Development and Integration Testing for each Baseline to address IFF Mode 4 End of Life (EOL) in 2020 within the fielded AEGIS Combat System configurations. In 4QFY18, Computer Programs will be delivered to support Certification Test of the baselines documented as part of Phase I.						
Phase II IFF Integration within AEGIS Baselines will capture completed code development in Phase I and implement in corrective actions within the AEGIS CSL. Phase II IPR #1 will be conducted in 3QFY18.						
FY 2019 Base Plans: Continue development of AEGIS Phase I/II/III IFF Integration within In-Service Baselines to support Mode 4 Inoculation and implement Mode 5 IFF within the Fire Control Loop and improve Mode 5 Interoperability.						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Phase I IPR #2 will support certification for the AEGIS Combat Systems and provide direction to start AEGIS Computer Program installation. Support Integration and Testing requirements to field IFF upgrade on AEGIS BL 5/6/7/9A/9C to address IFF Mode 4 End of Life (EOL) in 2020.						
Phase II IFF Integration within AEGIS Baselines will capture completed code development in Phase I and implement in corrective actions within the AEGIS CSL. Improvements will focus on increased integration of MODE 5 functionality within the AEGIS Combat System to improve battlegroup interoperability. Phase II IPR #2 will be conducted in 4QFY19.						
Phase III IFF Integration within AEGIS Baselines will continue corrective actions within the AEGIS CSL. Phase III IPR #1 will be conducted in 3QFY19.						
FY 2019 OCO Plans: N/A						
FY 2018 to FY 2019 Increase/Decrease Statement: Increase required to continue development of Phase I/II/III IFF updates that address use of MODE 5 data and address IFF Mode 4 End of Life within the Combat System to improve Strike Group interoperability effectiveness.						
Title: AEGIS BL 5.4 UPGRADE (PREVIOUSLY 5.3.X UPGRADE)		21.400	50.300	41.400	0.000	41.400
Articles:		-	-	-	-	-
FY 2018 Plans: Support development and engineering support of the AEGIS baseline 5.4. Phase 1 integrated AAW/BMD computer Program as part of Phase 1 implementation. Support Code Development and integration efforts to address emergent requirements related to the following capabilities: stream raid improvements, developed AEGIS Speed To Capability (ASTOC) improvements, and SM-6 capability within single computer program to improve AWS/BMD performance. Provide engineering support and resources to conduct developmental testing (DT) and system functional tests (SFTs) at land based test sites and provide artifacts to support Combat System Certification in FY19. Support IPR #1 in 1st quarter FY18. Support IPR #2 3rd quarter FY18. Support development and engineering of AEGIS Baseline 5.4 Phase 2 integrating Radar hardware improvements to improve performance against emerging threats. Support Surface Combat System Center design, installation,						

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
and integration of upgraded SPY hardware to support BL 5.4 testing efforts planned for FY19-21. Support the engineering studies required to install one (1) AEGIS SPY Array at Surface Combat System Center (SCSC).  <b>FY 2019 Base Plans:</b> Continue development and engineering support of the AEGIS baseline 5.4 Phase 1 integrated AAW/BMD computer program. Continue supporting Code Development and integration efforts to address emergent requirements related to the following capabilities: stream raid improvements, developed AEGIS Speed To Capability (ASTOC) improvements, and SM-6 capability within single computer program to improve AWS/BMD performance. Provide engineering support and resources to conduct developmental testing (DT) and system functional tests (SFTs) at land based test sites and provide artifacts to support Combat System Certification in FY19. Support IPR #3 in 1st quarter FY19. Support Test Readiness Review (TRR) 2nd quarter FY19. Support Engineering Assessment (EA) 3rd quarter FY19. Support Certification in 4th quarter FY19.  Support development and engineering of AEGIS Baseline 5.4 Phase 2, integrating Radar hardware improvements to improve performance against emerging threats. Complete Surface Combat System Center design, installation, and integration of upgraded SPY hardware to support BL 5.4 testing efforts planned for FY19-21. Complete engineering studies. Support System Requirements Review (SRR) in 2nd Quarter FY19.  <b>FY 2019 OCO Plans:</b> N/A  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding required to complete single computer program development effort testing and certification and begin requirements definition for the Hardware update.								
Title: TASK FORCE CYBER AWAKENING (TFCA)  <div>Articles:</div> <b>FY 2018 Plans:</b> Funding increase to support coding and integration of completed cybersecurity improvements in parallel with evaluation, development, and integration. AEGIS Cybersecurity Toolkit, file integrity checker, anti-malware, USB Media detection, CSTK, boundary proxy service, System incident and event manager, CASA upgrades, Common user interface, network device integrity and update manager capabilities will be completed, and undergo baseline integration during FY18. Development and engineering of computer program corrections, ID Management, certificate management, secure boot, application whitelisting, sandbox, cross domain and daily report capabilities. Integration and engineering updates necessary to integrate capabilities with each other and				11.910 -	16.367 -	10.500 -	0.000 -	10.500 -

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy				Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
the common user interface will also occur as these capabilities are readied for baseline integration. Planning and design efforts for follow on capability increments will continue using vulnerabilities and threats identified in FY17 to inform analysis of alternatives leading to final design. Consolidated findings of FY17 testing and system mapping data will be used to inform ongoing capability increment decisions and priorities. FY17 engineering effort to migrate combat system to CYBERSAFE criticality focused enclave architectures will continue. Finalize cyber security hardware, software, and appliance trade studies and inform future increments. Develop logistics documentation and training material.  <b>FY 2019 Base Plans:</b> Support integration of the AEGIS Cyber Upgrades as the capabilities mature. These improvements will include AEGIS Cyber security Toolkit, file integrity checker, anti-malware, USB Media detection, boundary proxy service, System incident and event manager, CASA upgrades, Common user interface, network device integrity and update manager capabilities as they become available for integration within the AEGIS Combat System. Each of these improvements will be evaluated to determine which AEGIS BL configurations can support integration and what current development efforts can be targeted to field the improvements. Continue to develop and engineer computer program corrections, ID Management, certificate management, secure boot, application whitelisting, sandbox, cross domain and daily report capabilities. Planning and design efforts for follow on capability increments will continue using vulnerabilities and threats identified in FY18 to inform analysis of alternatives leading to final design. Consolidated findings of FY18 testing and system mapping data will be used to inform ongoing capability increment decisions and priorities. FY18 engineering effort to migrate combat system to CYBERSAFE criticality focused enclave architectures will continue. Finalize cyber security hardware, software, and appliance trade studies and inform future increments. Develop logistics documentation and training material.  <b>FY 2019 OCO Plans:</b> N/A  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding required to continue to identify and develop solutions to counter Cyber vulnerabilities within the AEGIS Weapon System.						
Accomplishments/Planned Programs Subtotals		275.421	382.382	390.457	0.000	390.457

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy									Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• R&D 0604501N: Multi Mission Signal Processor	2.279	2.424	2.503	-	2.503	2.567	2.856	0.000	0.000	Continuing	Continuing
• SCN 2122: DDG 51	3,630.751	3,640.792	5,699.221	-	5,699.221	3,837.968	5,146.448	5,196.788	5,326.153	3,803.000	113,434.092
• OPN 0900: DDG Modernization	429.614	603.355	487.999	-	487.999	681.567	584.972	911.570	1,057.869	Continuing	Continuing
• R&D 0604378N	25.750	27.359	29.092	-	29.092	25.767	25.694	0.000	0.000	Continuing	Continuing
PU 3159: NIFC-CA											
• OPN 5231: Ship Missile Support Equipment (AEGIS Support Equipment)	307.447	274.795	213.090	-	213.090	288.118	303.262	330.198	340.984	Continuing	Continuing
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											
Major Milestones for ACB 12 (BL 9.A2): Completed BL 9.A2 CG 53 AEGIS Light-Off (ALO) third quarter FY17. BL 9.A2A Combat System Certification Panel second quarter of FY18. BL 9.A2B Combat System Certification Panel third quarter of FY18.											
Major Milestones for ACB 16 (BL 9.A2/B2/C2): Completed ACB16 BL 9.C2.0 Demonstration #1 third quarter FY17. Completed ACB16 BL 9.C2.0 Demonstration #2 fourth quarter FY17. ACB16 BL 9.C2.0 Combat System Certification Panel (CSCP) TI12 Configuration fourth quarter FY18. Completed ACB16 BL 9.A2.1/C2.1 In-Progress Review (IPR) #1 first quarter FY18. ACB16 BL 9.A2.1/C2.1 In-Progress Review (IPR) #2 fourth quarter FY18.											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Navy		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>	<b>Project (Number/Name)</b> 1447 / <i>Surf Combatant Combat System Imp</i>
<p>ACB16 BL 9.A2.1/C2.1 Engineering Assessment (EA) #1 fourth quarter FY18.  ACB16 BL 9.A2.1/C2.1 Engineering Assessment (EA) #2 second quarter FY19.  ACB16 BL 9.A2.1 / 9.C2.1 Combat System Certification Panel (CSCP) TI12H Configuration first quarter FY20.  ACB16 BL 9.A2.2 / 9.C2.2 In-Progress Review (IPR) #1 second quarter FY19.  ACB16 BL 9.A2.2 / 9.C2.2 Engineering Assessment (EA) #1 fourth quarter FY19  ACB16 BL 9.A2.2 / 9.C2.2 Combat System Certification Panel (CSCP) TI16 Configuration first quarter FY21.</p> <p>Major Milestones for ACB 20 / TI 20:  Completed ACB 20 Delta System Functional Review (SFR) third quarter FY17.  Completed ACB 20 Preliminary Design Review (PDR) first quarter FY18.  ACB 20 Critical Design Review (CDR) third quarter FY19.  ACB 20 AEGIS Light-Off (ALO) first quarter FY21.  ACB 20 Demonstration (DEMO) second quarter FY21.  ACB 20 Combat System Certification Panel second quarter FY23.  Completed Combat System Interface Support Equipment Critical Design Review (CDR) second quarter FY17.  Combat System Interface Support Equipment Delivery in fourth quarter FY18</p> <p>Major Milestones for AEGIS BL 5.4 Computer Program Integration:  Completed BL 5.4 Phase 1 In-Progress Review (IPR) #1 second quarter FY17.  Completed BL 5.4 Phase 1 In-Progress Review (IPR) #2 fourth quarter FY17.  Completed BL 5.4 Phase 1 In-Progress Review (IPR) #3 first quarter FY18.  BL 5.4 Phase 1 In-Progress Review (IPR) #4 third quarter FY18.  BL 5.4 Phase 1 In-Progress Review (IPR) #5 first quarter FY19.  BL 5.4 Phase 1 Test Readiness Review (TRR) second quarter FY19.  BL 5.4 Phase 1 Engineering Assessment (EA) third quarter FY19.  BL 5.4 Phase 1 Combat System Certification Panel (CSCP) fourth quarter FY19.  BL 5.4 Phase 2 Kickoff (KO) first quarter FY18.  BL 5.4 Phase 2 System Requirements Review (SRR) second quarter FY19.  BL 5.4 Phase 2 Preliminary Design Review (PDR) second quarter FY20.  BL 5.4 Phase 2 In-Progress Review (IPR) #1 second quarter FY21.  BL 5.4 Phase 2 Test Readiness Review (TRR) first quarter FY22  BL 5.4 Phase 2 Engineering Assessment (EA) second quarter FY22.  BL 5.4 Phase 2 Combat System Certification Panel (CSCP) fourth quarter FY22.</p> <p>Major Milestones for AEGIS MODE 4/5 Integration:</p>		



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Navy		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>	<b>Project (Number/Name)</b> 1447 / <i>Surf Combatant Combat System Imp</i>
<p>Effort Kickoff first quarter FY18.</p> <p>Phase I In-Progress Review (IPR) #1 second quarter FY18.</p> <p>Phase I Code Delivery fourth quarter FY18.</p> <p>Phase I In-Progress Review (IPR) #2 first quarter FY19.</p> <p>Phase I BL 6.3 Combat System Certification Panel second quarter FY19</p> <p>Phase I BL 7.2 Combat System Certification Panel fourth quarter FY19</p> <p>Phase II In-Progress Review (IPR) #1 third quarter FY18.</p> <p>Phase II In-Progress Review (IPR) #2 fourth quarter FY19.</p> <p>Phase III In-Progress Review (IPR) #1 third quarter FY19.</p> <p>Phase III In-Progress Review (IPR) #2 third quarter FY21.</p> <p>Major Milestones for Far Term Interoperability Improvement Plan (FTIIP):</p> <p>Completed Kickoff first quarter FY17.</p> <p>Completed FTIIP In-Progress Review (IPR) #1 third quarter FY17.</p> <p>FTIIP In-Progress Review (IPR) #2 fourth quarter FY18.</p> <p>FTIIP In-Progress Review (IPR) #3 fourth quarter FY19.</p> <p>FTIIP In-Progress Review (IPR) #4 fourth quarter FY20.</p> <p>Major Milestones for Task Force Cyber Awakening (TFCA):</p> <p>Completed In-Progress Review (IPR) #2 second quarter FY17.</p> <p>Completed In-Progress Review (IPR) #3 fourth quarter FY17.</p> <p>In-Progress Review (IPR) #4 second quarter FY18.</p> <p>In-Progress Review (IPR) #5 fourth quarter FY18.</p> <p>In-Progress Review (IPR) #6 second quarter FY19.</p> <p>In-Progress Review (IPR) #7 fourth quarter FY19.</p> <p>In-Progress Review (IPR) #8 second quarter FY20.</p> <p>In-Progress Review (IPR) #9 fourth quarter FY20.</p> <p>In-Progress Review (IPR) #10 second quarter FY21.</p> <p>In-Progress Review (IPR) #11 fourth quarter FY21.</p> <p>In-Progress Review (IPR) #12 second quarter FY22.</p> <p>Major Milestones for Combat System Test Bed (CSTB):</p> <p>Computer Program Delivery #1 second quarter FY19.</p> <p>Computer Program Delivery #2 second quarter FY20.</p> <p>Computer Program Accreditation BL 9.2.2 second quarter FY20.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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
Computer Program Delivery #3 second quarter FY21. Computer Program Delivery #4 second quarter FY22. Computer Program Accreditation BL 9.2 OT third quarter FY22. Computer Program Delivery #5 second quarter FY23.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPIF	Lockheed Martin : Moorestown, NJ	2,465.801	189.437	Oct 2016	294.322	Oct 2017	283.015	Oct 2018	-		283.015	Continuing	Continuing	Continuing
Systems Engineering	SS/CPFF	APL : Baltimore, MD	91.770	13.892	Oct 2016	16.080	Oct 2017	21.482	Oct 2018	-		21.482	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Dahlgren, VA	445.218	35.247	Oct 2016	36.890	Oct 2017	40.578	Oct 2018	-		40.578	Continuing	Continuing	Continuing
Systems Engineering	SS/CPAF	BAE Systems : Rockville, MD	56.870	5.263	Oct 2016	5.320	Oct 2017	5.521	Oct 2018	-		5.521	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	Raytheon : St. Petersburg, FL	0.000	0.000		0.000		3.400	Oct 2018	-		3.400	0.000	3.400	-
Systems Engineering	WR	NSWC : Port Hueneme, CA	81.455	7.846	Oct 2016	6.074	Oct 2017	6.578	Oct 2018	-		6.578	Continuing	Continuing	Continuing
Systems Engineering	WR	NWAS : Corona, CA	34.882	3.168	Oct 2016	3.854	Oct 2017	4.082	Oct 2018	-		4.082	Continuing	Continuing	Continuing
Systems Engineering	WR	SPAWAR : San Diego, CA	12.307	0.625	Oct 2016	0.824	Oct 2017	1.089	Oct 2018	-		1.089	Continuing	Continuing	Continuing
Systems Engineering	WR	Various : Various	170.161	10.879	Oct 2016	11.958	Oct 2017	15.524	Oct 2018	-		15.524	Continuing	Continuing	Continuing
Award fees	SS/CPAF	Lockheed Martin : Moorestown, NJ	272.094	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Award fees	SS/CPAF	BAE Systems : Rockville, MD	3.853	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Award fees	SS/CPAF	Alion Science : Washington DC	2.920	0.000		0.000		0.000		-		0.000	0.000	2.920	-
Award fees	WR	Various : Various	9.480	0.261	Oct 2016	0.350	Oct 2017	0.386	Oct 2018	-		0.386	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	Technology Service Corporation : Silver Spring , MD	0.000	0.000		0.000		0.432	Oct 2018	-		0.432	0.000	0.432	-
Subtotal			3,646.811	266.618		375.672		382.087		-		382.087	Continuing	Continuing	N/A
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.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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					
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	Department of Interior : Boise, Idaho	42.498	1.281	Oct 2016	0.980	Oct 2017	1.058	Oct 2018	-		1.058	Continuing	Continuing	Continuing
Test and Evaluation	WR	NAVAIR : Pax River, MD	15.350	1.522	Oct 2016	1.350	Oct 2017	1.524	Oct 2018	-		1.524	Continuing	Continuing	Continuing
Test and Evaluation	Various	PMRF : Hawaii, HI	0.000	2.500	Oct 2016	0.900	Oct 2017	0.986	Oct 2018	-		0.986	0.000	4.386	-
Subtotal			57.848	5.303		3.230		3.568		-		3.568	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	SS/CPAF	Alion Science : Washington DC	30.173	1.264	Oct 2016	1.350	Oct 2017	1.532	Oct 2018	-		1.532	Continuing	Continuing	Continuing
Program Management Support	SS/CPAF	SAIC : Mclean, VA	19.902	2.236	Oct 2016	2.130	Oct 2017	3.270	Oct 2018	-		3.270	Continuing	Continuing	Continuing
DAWDF	Various	Various : Various	1.807	0.000	Oct 2016	0.000	Oct 2017	0.000	Oct 2018	-		0.000	0.000	1.807	-
Subtotal			51.882	3.500		3.480		4.802		-		4.802	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3,756.541	275.421		382.382		390.457		-		390.457	Continuing	Continuing	N/A
Remarks															

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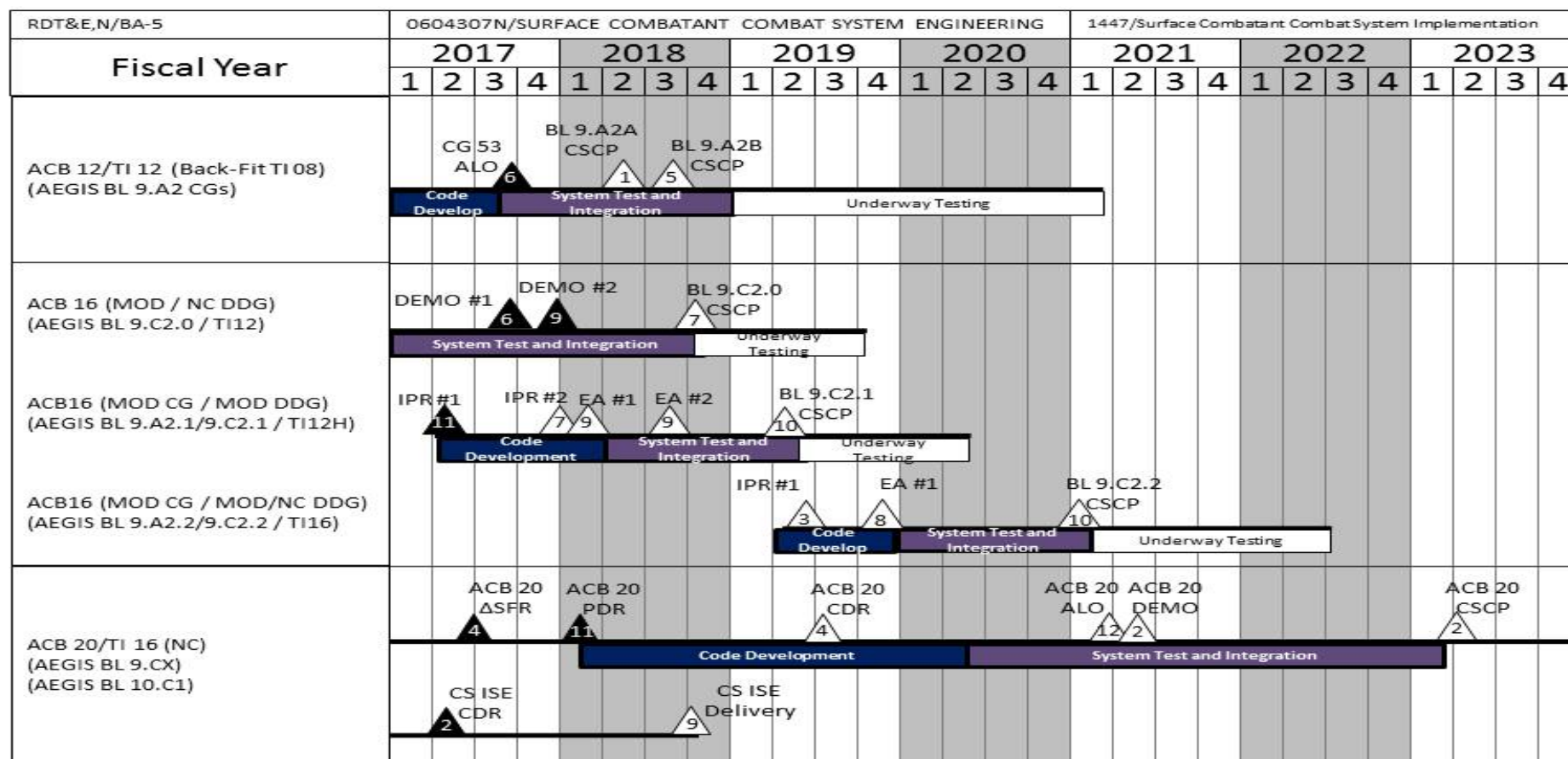
**Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy**

Date: February 2018

Appropriation/Budget Activity	1319 / 5

**R-1 Program Element (Number/Name)**  
PE 0604307N / *Surface Combatant Cmbt*  
*Sys Eng*

<b>Project (Number/Name)</b>	1447 / Surf Combatant Combat System Imp
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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2019 Navy

Date: February 2018

Appropriation/Budget Activity

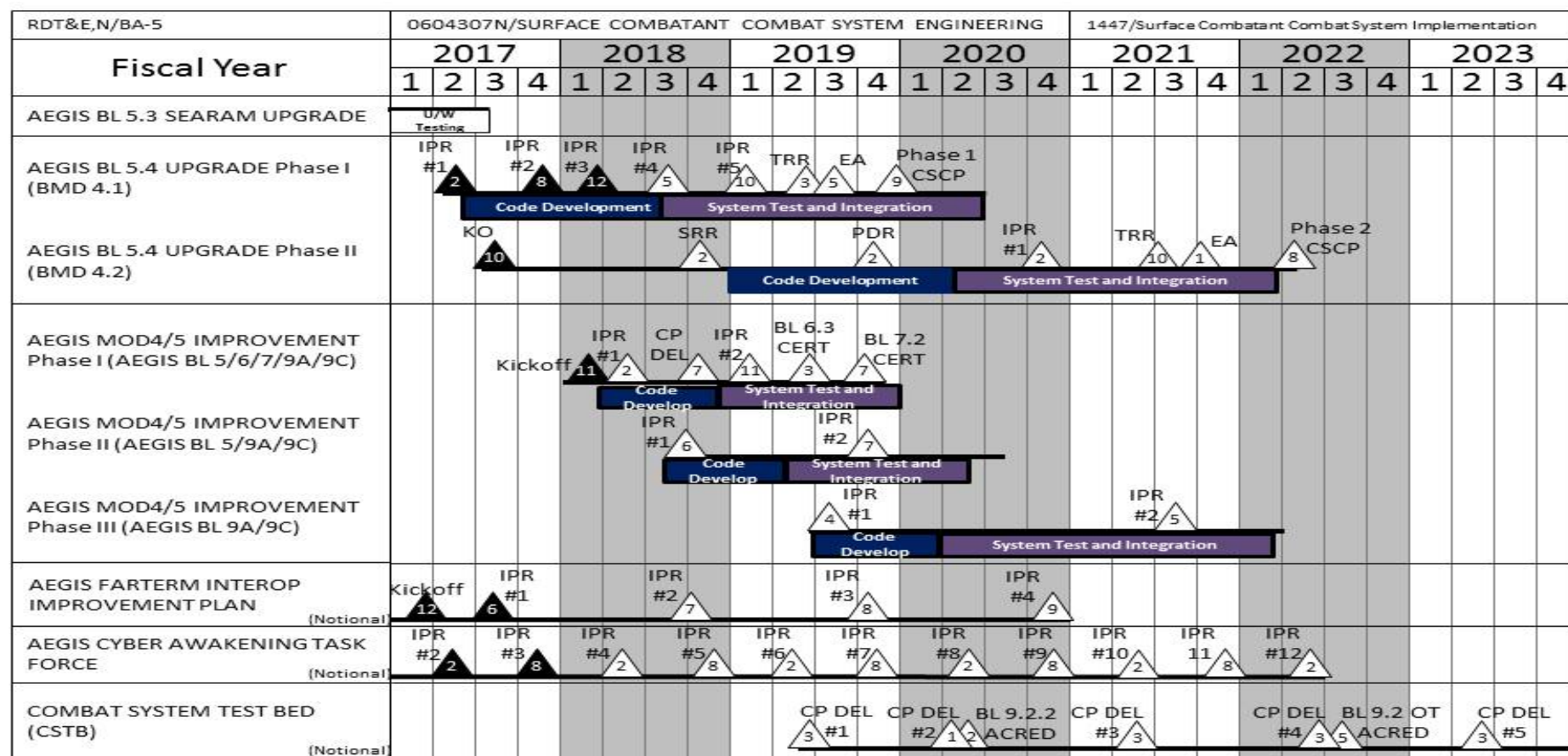
1319 / 5

R-1 Program Element (Number/Name)

PE 0604307N / Surface Combatant Cmbt Sys Eng

Project (Number/Name)

1447 / Surf Combatant Combat System Imp



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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	

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1447</b>				
ADVANCED CAPABILITY BUILD 12 (BL 9.A2): ACB 12 (BL 9.A2) CG 53 AEGIS LIGHT-OFF	3	2017	3	2017
ADVANCED CAPABILITY BUILD 12 (BL 9.A2): ACB 12 (BL 9.A2) COMPUTER PROGRAM CERTIFICATION PANEL 9.A2.A	2	2018	2	2018
ADVANCED CAPABILITY BUILD 12 (BL 9.A2): ACB 12 (BL 9.A2) COMPUTER PROGRAM CERTIFICATION PANEL 9.A2.B	3	2018	3	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2.0) DEMO #1	3	2017	3	2017
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2.0) DEMO #2	4	2017	4	2017
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.C2.0) COMBAT SYSTEM CERTIFICATION PANEL (T12)	4	2018	4	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.1/9.C2.1) IN-PROGRESS REVIEW (IPR) #1	1	2018	1	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.1/9.C2.1) IN-PROGRESS REVIEW (IPR) #2	4	2018	4	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.1/9.C2.1) ENGINEERING ASSESSMENT (EA) #1	4	2018	4	2018
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.1/9.C2.1) ENGINEERING ASSESSMENT (EA) #2	2	2019	2	2019
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.1/9.C2.1) COMBAT SYSTEM CERTIFICATION PANEL (T12H)	1	2020	1	2020
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.2/9.C2.2) IN-PROGRESS REVIEW (IPR) #1	2	2019	2	2019
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.2/9.C2.2) ENGINEERING ASSESSMENT (EA) #1	4	2019	4	2019

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy				Date: February 2018	
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
ADVANCED CAPABILITY BUILD 16 (BL 9.C2): ACB 16 (BL 9.A2.2/9.C2.2) COMBAT SYSTEM CERTIFICATION PANEL (TI16)		1	2021	1	2021
ADVANCED CAPABILITY BUILD 20: ACB 20 DELTA SYSTEM FUNCTIONAL REVIEW (SFR)		3	2017	3	2017
ADVANCED CAPABILITY BUILD 20: ACB 20 PRELIMINARY DESIGN REVIEW (PDR)		1	2018	1	2018
ADVANCED CAPABILITY BUILD 20: ACB 20 CRITICAL DESIGN REVIEW (CDR)		3	2019	3	2019
ADVANCED CAPABILITY BUILD 20: ACB 20 AEGIS LIGHT OFF (ALO)		1	2021	1	2021
ADVANCED CAPABILITY BUILD 20: ACB 20 DEMONSTRATION		2	2021	2	2021
ADVANCED CAPABILITY BUILD 20: ACB 20 COMBAT SYSTEM CERTIFICATION PANEL (CSCP)		2	2023	2	2023
ADVANCED CAPABILITY BUILD 20: CS ISE CRITICAL DESIGN REVIEW		2	2017	2	2017
ADVANCED CAPABILITY BUILD 20: CS ISE DELIVERY		4	2018	4	2018
COMBAT SYSTEM TEST BED (CTSB): CTSB BUILD #1		2	2019	2	2019
COMBAT SYSTEM TEST BED (CTSB): B/L 9.2.2 ACCREDITATION		2	2020	2	2020
COMBAT SYSTEM TEST BED (CTSB): CTSB BUILD #2		2	2020	2	2020
COMBAT SYSTEM TEST BED (CTSB): CTSB BUILD #3		2	2021	2	2021
COMBAT SYSTEM TEST BED (CTSB): CTSB BUILD #4		2	2022	2	2022
COMBAT SYSTEM TEST BED (CTSB): B/L 9.2 OT ACCREDITATION		3	2022	3	2022
COMBAT SYSTEM TEST BED (CTSB): CTSB BUILD #5		2	2023	2	2023
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 IN-PROGRESS REVIEW (IPR) #1		2	2017	2	2017
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 IN-PROGRESS REVIEW (IPR) #2		4	2017	4	2017
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 IN-PROGRESS REVIEW (IPR) #3		1	2018	1	2018
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 IN-PROGRESS REVIEW (IPR) #4		3	2018	3	2018
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 IN-PROGRESS REVIEW (IPR) #5		1	2019	1	2019
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 TEST READINESS REVIEW (TRR)		2	2019	2	2019



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018	
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 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 ENGINEERING ASSESSMENT (EA)	3	2019	3	2019
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 1 COMBAT SYSTEM CERTIFICATION PANEL (CSCP)	4	2019	4	2019
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 2 KICK OFF (KO)	1	2018	1	2018
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 2 SYSTEM REQUIREMENTS REVIEW (SRR)	2	2019	2	2019
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 2 PRELIMINARY DESIGN REVIEW (PDR)	2	2020	2	2020
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 2 IN-PROGRESS REVIEW (IPR)	2	2021	2	2021
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 2 TEST READINESS REVIEW (TRR)	1	2022	1	2022
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 2 ENGINEERING ASSESSMENT (EA)	2	2022	2	2022
AEGIS BL 5.4 UPGRADE: AEGIS BL 5.4 PHASE 2 COMBAT SYSTEM CERTIFICATION PANEL (CSCP)	4	2022	4	2022
AEGIS IFF MODE 4/5 Integration: IFF MOD 4/5 Kickoff	1	2018	1	2018
AEGIS IFF MODE 4/5 Integration: PHASE I IN-PROGRESS REVIEW #1	2	2018	2	2018
AEGIS IFF MODE 4/5 Integration: PHASE I COMPUTER PROGRAM DELIVERY	4	2018	4	2018
AEGIS IFF MODE 4/5 Integration: PHASE I IN-PROGRESS REVIEW #2	1	2019	1	2019
AEGIS IFF MODE 4/5 Integration: PHASE I BL 6.3 COMBAT SYSTEM CERTIFICATION PANEL	2	2019	2	2019
AEGIS IFF MODE 4/5 Integration: PHASE I BL 7.2 COMBAT SYSTEM CERTIFICATION PANEL	4	2019	4	2019
AEGIS IFF MODE 4/5 Integration: PHASE II IN-PROGRESS REVIEW #1	3	2018	3	2018
AEGIS IFF MODE 4/5 Integration: PHASE II IN-PROGRESS REVIEW #2	4	2019	4	2019
AEGIS IFF MODE 4/5 Integration: PHASE III IN-PROGRESS REVIEW #1	3	2019	3	2019

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018		
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 IFF MODE 4/5 Integration: PHASE III IN-PROGRESS REVIEW #2		3	2021	3	2021
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP KICKOFF		1	2017	1	2017
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #1		3	2017	3	2017
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #2		4	2018	4	2018
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #3		4	2019	4	2019
FAR TERM INTEROPERABILITY IMPROVEMENTS PLAN: FTIIP IN-PROGRESS REVIEW #4		4	2020	4	2020
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
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #11		4	2021	4	2021
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #12		2	2022	2	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3357: Aegis Training Improvement Program	27.124	10.355	7.856	6.946	-	6.946	7.863	7.766	6.404	5.474	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). TSTC continues to integrate and update, as new tactical capabilities are being introduced, to enable crew operator proficiency training for basic and sustainment level training events, through distributed strike group certification fleet synthetic training (FST) events and including COMPTUEX FST at Sea integration into Live, Virtual and Constructive (LVC) environment. Continued Development is required to integrate new capabilities and interfaces to provide training for AEGIS and SSDS combat system capability upgrades, and to address the Fleet's Live, Virtual and Constructive (LVC) Fleet Training Wholeness initiative. Additionally, modernization is needed to support the DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan.

The Advanced Training Domain (ATD) is being developed to combine BFTT and the AEGIS Combat Training System (ACTS) into a common system that integrates with AEGIS BL 9.2.2AF, and SSDS BL 11.xAF. ATD is being hosted along with the AEGIS and SSDS combat system on TI-16 common processing and display hardware. ATD is being designed to be the core of the Total Ship Training Capability, and is projected to be more reliable, simpler to use, and architected to be extensible to meet interoperability and capability enhancement challenges in the future.

The BFTT is being updated to maintain integration and capability enhancements developed for the Cooperative Engagement Capability (CEC), Surface Electronic Warfare Improvement Program (SEWIP), and the Carrier Tactical Support Center (CV-TSC), and SSDS Fire Control Loop Improvement Program.

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 FST/LVC events.

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018				
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				
<p>Develop and integrate MH-60R simulator to enable embedded shipboard training in support of basic and sustainment training, as well as establishes the pathway to support pier-side Fleet Synthetic Training (FST) events.</p> <p>Develop and Integrate Cooperative Engagement Capability (CEC) Enhanced Training (CET) to support basic and sustainment level training, as well as provide ability to distribute and establish CEC data link during pier-side fleet synthetic training exercises. CET will also provide enable proficiency training of NIFC-CA capability.</p> <p>Develop and integrate CEC Interim Training (CIT) capability to support pier-side fleet synthetic training events. This is an interim capability support the distributed portion of the CET capability, until CET is fully deployed. This supports training of strike groups of new tactical capabilities that were integrated into the AEGIS BL9 ships, and provides the necessary functionality to allow ships to train as a strike group.</p> <p>Develop and integrate upgrades to Battle-Force Electronic Warfare Trainer (BEWT) to support soft kill training with NULKA.</p> <p>Develop Identification Friend or Foe (IFF) simulator to enable training of Modes 1, 2, 3A, 4, C, 5 and S on both AEGIS and SSDS ships. Capability will support AEGIS and SSDS IFF MODE 4/5 Integration program will address training Mode 4 Inoculation, and allow training of Modes 5 and S IFF.</p> <p>Develop and integrate commensurate training improvements to SSDS ACB 20 for Enhanced Sea Sparrow Missile (ESSM) and Electronic Warfare (EW) tactical improvements.</p> <p>Integrate Navy Continuous Training Environment (NCTE) networking and cyber security upgrades maintain authorization to participate in distributed shipboard training events.</p> <p>TSTC integrated on AEGIS provides the capability to complete system and operational level testing of the combat system.</p>							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: AEGIS Training Improvement and ACB 16 Integration			10.355	7.856	5.644	0.000	5.644
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 2018 Plans: BFTT 5.1.1: Complete and certify for delivery and integration on BL 9.2.1.							

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy				Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Conduct combat systems integration and certification testing for Simulated NULKA Soft-Kill training capability, for within AN/SLQ-32(V)6 Surface Electronic Warfare Team Trainer (SEWTT), and Battle-Force Electronic warfare Trainer (BEWT) in support of legacy AN/SLQ-32A/B systems.						
Conduct ATD 1.0 Test and Evaluation in support of AEGIS ACB 16 phase 2 and SSDS ACB 12+ TI-16 based combat systems.						
Deliver CEC Embedded Training capability, IFF Simulator, NULKA Simulator, and MH-60R Simulator for integration and testing.						
Develop tactical representative training improvements to SSDS ACB 20 by developing Own-Ship Weapon Simulation based on ESSM BLK 2 models, and implement Electronic Warfare Training improvements for Electronic Attack and Advanced Off-board Electronic Warfare (AOEW).						
FY 2019 Base Plans: AEGIS Modifications to support integration and testing of ATD and BFTT Integrated Training Improvements.						
ATD 1.0: Deliver ATD 1.0 to support AEGIS BL 9.2.2 and SSDS BL 11.x						
ATD 1.1: Conduct integration testing with AEGIS BL 10.x						
BFTT 5.1.2: Deliver training capability to support SSDS Combat System FCLIP upgrades.						
ATD and BFTT: Continue to achieve interoperability with NCTE, AEGIS and SSDS Combat Systems; SLQ-32, SQQ-89, CV-TSC, SPQ-9B AMDR, EASR, and CEC PARM Elements.						
FY 2019 OCO Plans: N/A						
FY 2018 to FY 2019 Increase/Decrease Statement: Decrease due to rate changes.						
Title: Fleet Training Wholeness		0.000	0.000	1.302	0.000	1.302
Articles:		-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: N/A							
FY 2019 Base Plans: Develop ECP's to implement ability for SPS-48 and SPQ-9B radars to process both simulated and live contacts.							
Develop changes on AEGIS and SSDS baselines to allow training to overlay tactical displays to support training underway.							
Develop of Surface Warfare Capability for integration on AEGIS.							
Develop Cooperative Engagement Capability (CEC) Distributed Training Capability enhancements for training underway.							
Assess safety and navigation distribution for underway training.							
Develop data collection and after-action review tools for large events.							
Develop surface search radar simulators.							
Integrate shipboard synthetic tactical radios.							
Develop weapon systems modifications to integrate LVC functionality and safety.							
Initiate ATD 2.x and BFTT 5.2.x development efforts to integrate above capabilities.							
FY 2019 OCO Plans: N/A							
FY 2018 to FY 2019 Increase/Decrease Statement: Increased funding provided to address training deficiencies within the AEGIS Combat System and associated Weapons Systems.							
Accomplishments/Planned Programs Subtotals			10.355	7.856	6.946	0.000	6.946

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Navy										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>				<b>Project (Number/Name)</b> 3357 / <i>Aegis Training Improvement Program</i>				
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
	<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u> <u>Base</u>	<u>FY 2019</u> <u>OCO</u>	<u>FY 2019</u> <u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
	• RDTE/0204571N/1427: <i>Surface Tactical Team Trainer (STTT)</i>	12.148	15.274	34.187	-	34.187	42.554	34.241	24.353	17.876	Continuing	Continuing
<b>Remarks</b>												
<b>D. Acquisition Strategy</b>												
Efforts will be completed on various contracts to support requirements updates to multiple products that will support Training Integration and Implementation within AEGIS ACB16.												
<b>E. Performance Metrics</b>												
Training Improvement Program efforts will complete major development milestones.												
Major Milestones for ACB 16 (BL 9.A2/B2/C2):												
Completed ACB16 BL 9.C2.0 Demonstration #1 third quarter FY17.												
ACB16 BL 9.C2.0 Demonstration #2 fourth quarter FY17.												
ACB16 BL 9.C2.0 Combat System Certification Panel (CSCP) TI12 Configuration fourth quarter FY18.												
ACB16 BL 9.A2.1/C2.1 In-Progress Review (IPR) #1 first quarter FY18.												
ACB16 BL 9.A2.1/C2.1 In-Progress Review (IPR) #2 fourth quarter FY18.												
ACB16 BL 9.A2.1/C2.1 Engineering Assessment (EA) #1 fourth quarter FY18.												
ACB16 BL 9.A2.1/C2.1 Engineering Assessment (EA) #2 second quarter FY19.												
ACB16 BL 9.A2.1 / 9.C2.1 Combat System Certification Panel (CSCP) TI12H Configuration first quarter FY20.												
ACB16 BL 9.A2.2 / 9.C2.2 In-Progress Review (IPR) #1 second quarter FY19.												
ACB16 BL 9.A2.2 / 9.C2.2 Engineering Assessment (EA) #1 fourth quarter FY19												
ACB16 BL 9.A2.2 / 9.C2.2 Combat System Certification Panel (CSCP) TI16 Configuration first quarter FY21.												

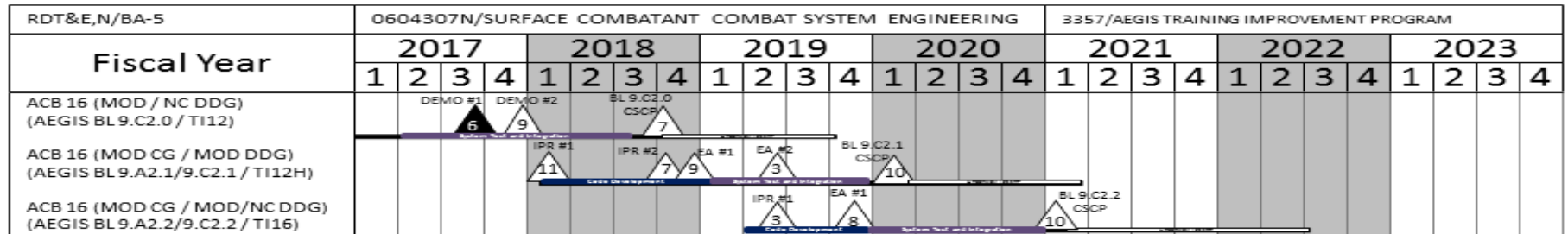
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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2019 Navy</b>												<b>Date: February 2018</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>						<b>Project (Number/Name)</b> 3357 / <i>Aegis Training Improvement Program</i>			
<b>Product Development (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Product Development	Various	Various : Various	14.186	4.776	Dec 2016	4.178	Dec 2017	3.696	Dec 2018	-		3.696	Continuing	Continuing	Continuing
<b>Subtotal</b>			14.186	4.776		4.178		3.696		-		3.696	Continuing	Continuing	N/A
<b>Support (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
System Engineering	Various	Various : Various	11.441	4.979	Dec 2016	3.050	Dec 2017	2.592	Dec 2018	-		2.592	Continuing	Continuing	Continuing
<b>Subtotal</b>			11.441	4.979		3.050		2.592		-		2.592	Continuing	Continuing	N/A
<b>Management Services (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Engineering Support	C/CPIF	CACI : Arlington, VA	1.066	0.500	Dec 2016	0.527	Dec 2017	0.553	Dec 2018	-		0.553	Continuing	Continuing	Continuing
Professional Support	C/CPIF	TMB : Washington DC	0.431	0.100	Dec 2016	0.101	Dec 2017	0.105	Dec 2018	-		0.105	Continuing	Continuing	Continuing
<b>Subtotal</b>			1.497	0.600		0.628		0.658		-		0.658	Continuing	Continuing	N/A
			<b>Prior Years</b>	<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			27.124	10.355		7.856		6.946		-		6.946	Continuing	Continuing	N/A
<b>Remarks</b>															



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2019 Navy</b>			<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604307N / Surface Combatant Cmbt Sys Eng		<b>Project (Number/Name)</b> 3357 / Aegis Training Improvement Program	



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 Navy			<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>	<b>Project (Number/Name)</b> 3357 / <i>Aegis Training Improvement Program</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3357</b>				
ACB16 BL 9.C2: ACB 16 (BL 9.C2.0) DEMO #1	3	2017	3	2017
ACB16 BL 9.C2: ACB 16 (BL 9.C2.0) DEMO #2	4	2017	4	2017
ACB16 BL 9.C2: ACB 16 (BL 9.C2.0) COMBAT SYSTEM CERTIFICATION PANEL (TI12)	4	2018	4	2018
ACB16 BL 9.C2: ACB 16 (BL 9.C2.1) IN-PROGRESS REVIEW (IPR) #1	1	2018	1	2018
ACB16 BL 9.C2: ACB 16 (BL 9.C2.1) IN-PROGRESS REVIEW (IPR) #2	4	2018	4	2018
ACB16 BL 9.C2: ACB 16 (BL 9.C2.1) ENGINEERING ASSESSMENT #1	4	2018	4	2018
ACB16 BL 9.C2: ACB 16 (BL 9.C2.1) ENGINEERING ASSESSMENT #2	2	2019	2	2019
ACB16 BL 9.C2: ACB 16 (BL 9.C2.1) COMBAT SYSTEM CERTIFICATION PANEL (TI12H)	1	2020	1	2020
ACB16 BL 9.C2: ACB 16 (BL 9.C2.2) IN-PROGRESS REVIEW (IPR) #1	2	2019	2	2019
ACB16 BL 9.C2: ACB 16 (BL 9.C2.2) ENGINEERING ASSESSMENT #1	4	2019	4	2019
ACB16 BL 9.C2: ACB 16 (BL 9.C2.2) COMBAT SYSTEM CERTIFICATION PANEL (TI126)	1	2021	1	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Navy										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>				<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: <i>Congressional Adds</i>	0.000	2.902	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.902
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
 Support the implementation of Condition Based Maintenance (CBM) improvements on the ADEPT tool specific to the Fire Control System (FCS) MK-99 System. These improvements are targeted to improve the operational availability of the FCS system fielded on AEGIS CG's and DDG's.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>
<b><i>Congressional Add:</i></b> Small Business Technology Insertion	2.902	0.000
<b><i>FY 2017 Accomplishments:</i></b> N/A		
<b><i>FY 2018 Plans:</i></b> N/A		
<b>Congressional Adds Subtotals</b>	2.902	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
 N/A

**Remarks**

**D. Acquisition Strategy**  
 IDIQ Contract through NSWC PH.

**E. Performance Metrics**  
 Pilot Implementation - SEPT 2017

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mikros System Corp	C/IDIQ	NSWC PH : Port Hunemee, CA.	0.000	2.802	Aug 2017	0.000		0.000		-		0.000	0.000	2.802	-
Subtotal			0.000	2.802		0.000		0.000		-		0.000	0.000	2.802	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PSS Support	C/FFP	TMB : Washington, DC.	0.000	0.100	Sep 2017	0.000		0.000		-		0.000	0.000	0.100	-
Subtotal			0.000	0.100		0.000		0.000		-		0.000	0.000	0.100	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	2.902		0.000		0.000		-		0.000	0.000	2.902	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy			Date: February 2018		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng			Project (Number/Name) 9999 / Congressional Adds

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 9999																												
ADSSS Upgrade: Pilot Program																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 Navy		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>	<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 9999</i></b>				
ADSSS Upgrade: Pilot Program	4	2017	4	2017