Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604756N *I Ship Self Def (Engage: Hard Kill)*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	609.719	42.551	96.937	99.619	-	99.619	107.920	156.846	151.251	104.765	Continuing	Continuing
0167: *5in Rolling Airframe Missile*	204.839	1.280	12.705	14.275	-	14.275	13.175	5.932	0.720	0.745	Continuing	Continuing
0173: *NATO Sea Sparrow*	404.880	41.271	79.232	84.344	-	84.344	94.245	132.914	109.189	81.311	Continuing	Continuing
9081: *Phalanx CIWS SEARAM*	0.000	-	5.000	1.000	-	1.000	0.500	18.000	41.342	22.709	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides funding for the development of systems that fulfill a portion of the third phase of the Ship Self Defense: Engage Hard Kill. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming Anti-Ship Cruise Missiles (ASCM). Missile and system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (0173), Rolling Airframe Missile (RAM) (0167), Phalanx Close-In Weapon System (CIWS) SeaRAM (9853A), Griffin, Javelin and Spike missile (3342). Missile improvements include improved kinematic performance plus advanced seeker and low elevation fusing/warhead capability improvements. CIWS System improvements include Technology Refresh for current fleet population and Next Generation CIWS. New system developments include integration of Griffin missile into Patrol Coastal (PC) and Littoral Combat Ship Missile Module, and development and/or qualification of shoulder launched missile system.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	43.303	96.937	120.542	-	120.542
Current President's Budget	42.551	96.937	99.619	-	99.619
Total Adjustments	-0.752	-	-20.923	-	-20.923
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.750	-			
• SBIR/STTR Transfer	-1.502	-			
• Program Adjustments	-	-	-20.000	-	-20.000
• Rate/Misc Adjustments	-	-	-0.923	-	-0.923

Change Summary Explanation

FY14 funding decrease due to SBIR/STTR Transfer assessment

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604756N *I Ship Self Def (Engage: Hard Kill)*

FY16 funding decrease due to a rephasing of ESSM Block 2 funding into FY17 to account for funding being provided by other International Block 2 contributing Nations.

FY16-FY18 funding increase for RAM supports the implementation of RAM changes identified in the Integrated Combat System Failure Review Board (CSFRB) report known as the Fire Control Loop Improvement Project (FCLIP). These funds support RAM systems engineering, design analysis and testing of the combat system in support of the FCLIP process. Funding will deliver software baseline changes to the RAM Block 2 missiles, launcher software updates and updated interface to the combat system.

Changes to RAM Initial Operational Test and Evaluation (IOT&E) milestones which also impact declaration of RAM Block 2 Initial Operational Capability (IOC) and planned Full Rate Production (FRP) Decision have been driven by several factors outside the control of the program office. All flight testing was disrupted by the NAVAIR issued national moratorium on usage of BQM targets imposed after the 16 November 2013 testing incident where a BQM-74 drone impacted USS Chancellorsville (CG 62). RAM flight testing was reinstated in June 2014. In addition to the BQM flight test moratorium, a successful demonstration of Combat System (CS) enhancements implemented as a result of the Fire Control Loop Improvement Project (FCLIP) was required to ensure proper RAM designation for stream raid engagement. IT-C2 is comprised of three test events: G,I and J. Test events G and I are scheduled to be completed in January 2015 and J, as a combined enterprise test event, has been moved to the right to align to another programs schedule. The shift in start and end dates for IT-C4 Multi-Stage Supersonic Target (MSST) was caused by a delay in the MSST program to provide viable targets.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 0167 / *5in Rolling Airframe Missile*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0167: *5in Rolling Airframe Missile*	204.839	1.280	12.705	14.275	-	14.275	13.175	5.932	0.720	0.745	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The RAM program is an international cooperative program with the government of the Federal Republic of Germany. The purpose of this program is to develop, test, and field a surface-to-air self-defense system utilizing a dual mode, passive radio frequency/infrared RAM. The baseline system (Block 0) provides a self-defense system to counter ASCMs. RAM Block 0/1 provide defense capability against active and passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the utilization of passive radio frequency and infrared seekers and a maritime optimized fuse. The RAM Block 1A software update and the Mk 49 MOD 3 launcher upgrade program provide an additional asymmetric capability against helicopters, aircraft and surface craft. The RAM Block 2 upgrade program is a cooperative requirement of the U.S. and Federal Republic of Germany, as agreed to in an international Memorandum of Understanding (MOU), and allows RAM to counter emerging highly maneuverable ASCM threats utilizing advanced seekers while maintaining all the proven capabilities of RAM Block 0/1/1A's accurate terminal guidance, proven lethality, and no shipboard post launch dependence. Funding supports formal Developmental and Operational Testing (DT/OT) scheduled through FY20, data analysis, operational/test driven studies, support of combat system performance analysis, identification of operationally relevant improvements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Rolling Airframe Missile Block 2 Development and Test	1.148	12.634	14.211	-	14.211
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Funded ongoing integrated OT&E (Development and Operational) IT-C2 testing, analysis, incorporation of any changes and associated efforts to achieve Initial Operational Capability (IOC) decision and support a Full Rate Production (FRP) decision.					
FY 2015 Plans: Funds ongoing Integrated OT&E (Development and Operational) IT-C2 testing, analysis, incorporation of any changes and associated efforts to achieve IOC decision and support a FRP decision. Funds also support RAM Systems Engineering, design analysis and testing of the combat system changes in support of the Fire Control Loop Improvement Project (FCLIP) process. Funding will deliver software baseline changes to the RAM Block 2 Missiles, launcher software updates and updated interface to the combat system.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0167 / *5in Rolling Airframe Missile*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Funds ongoing Integrated OT&E (Development and Operational) OT-C5 testing, analysis, incorporation of any changes and associated efforts to support a FRP decision. Funds also support RAM systems engineering, design analysis and testing of the combat system changes in support of the FCLIP process. Funding will deliver software baseline changes to the RAM Block 2 Missiles, launcher software updates and updated interface to the combat system. Funds support additional engineering efforts to transition from gap analysis/system requirements generation into preliminary design and simulation culminating in a Preliminary Design Review (PDR) in FY16. ***FY 2016 OCO Plans:*** N/A					
Title: Rolling Airframe Missile Block 2 Travel	0.132	0.071	0.064	-	0.064
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Funded program office travel to support program/testing as required by program schedule and in accordance with travel reduction mandate. ***FY 2015 Plans:*** Funds program office travel to support program/testing as required by program schedule and in accordance with travel reduction mandate. ***FY 2016 Base Plans:*** Funds program office travel to support program/testing as required by program schedule and in accordance with travel reduction mandate. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.280	12.705	14.275	-	14.275

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN 5238: *RAM GMLS*	0.491	-	-	-	-	-	-	-	-	Continuing	Continuing
• WPN 2242: *RAM*	65.943	76.792	80.826	-	80.826	82.465	81.713	83.740	85.885	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0167 / *5in Rolling Airframe Missile*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN 5231: *Ship Missile Support Equipment*	-	4.373	9.799	-	9.799	8.092	7.828	6.448	3.251	Continuing	Continuing

Remarks

D. Acquisition Strategy

The RAM Program uses directed sole source contracts with Raytheon Missile Systems Company, Tucson, AZ.

E. Performance Metrics

Successfully complete DT/OT.
Achieve IOC decision and support a FRP decision.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 0167 / *5in Rolling Airframe Missile*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 2 Upgrade	C/CPAF	Various : Various	154.650	-		-		-		-		-	-	154.650	-
Primary Hardware Dev/Blk 1	Various	Various : Various	10.081	-		-		-		-		-	-	10.081	-
FCLIP	WR	PHD : CA	0.000	-		0.425	Jan 2015	0.420	Nov 2015	-		0.420	-	0.845	-
FCLIP	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	-		10.389	Jan 2015	10.560	Nov 2015	-		10.560	-	20.949	-
FCLIP	WR	China Lake : CA	0.000	-		0.544	Nov 2014	1.742	Nov 2015	-		1.742	-	2.286	-
FCLIP	SS/CPFF	JHU/APL : MD	0.000	-		0.118	Jan 2015	0.365	Dec 2015	-		0.365	-	0.483	-
		Subtotal	164.731	-		11.476		13.087		-		13.087	-	189.294	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis	Various	Various : Various	1.210	-		-		-		-		-	-	1.210	-
		Subtotal	1.210	-		-		-		-		-	-	1.210	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	C/CPFF	Raytheon : Tucson	15.323	0.621	Nov 2013	0.684	Jan 2015	0.380	Nov 2015	-		0.380	-	17.008	-
Test Support	WR	China Lake/PHD : CA/CA	11.540	0.478	Nov 2013	0.373	Nov 2014	0.444	Nov 2015	-		0.444	Continuing	Continuing	Continuing
FOT&E	WR	China Lake : PHD, CA	4.674	0.027	Nov 2013	-		-		-		-	-	4.701	-
Miscellaneious	Various	Various : Various	5.733	0.022	Apr 2014	0.020	Jan 2015	-		-		-	-	5.775	-
Test Support	SS/CPFF	JHU/APL : MD	0.282	-		0.075	Jan 2015	0.300	Dec 2015	-		0.300	-	0.657	-
		Subtotal	37.552	1.148		1.152		1.124		-		1.124	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 0167 / *5in Rolling Airframe Missile*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Allot	Program Office : VA	1.199	0.132	Oct 2013	0.077	Oct 2014	0.064	Oct 2015	-		0.064	Continuing	Continuing	Continuing
Defense Acquisition Workforce Development Fund	Various	various : various	0.147	-		-		-		-		-	-	0.147	-
		Subtotal	1.346	0.132		0.077		0.064		-		0.064	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	204.839	1.280		12.705		14.275		-		14.275	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0167 / *5in Rolling Airframe Missile*

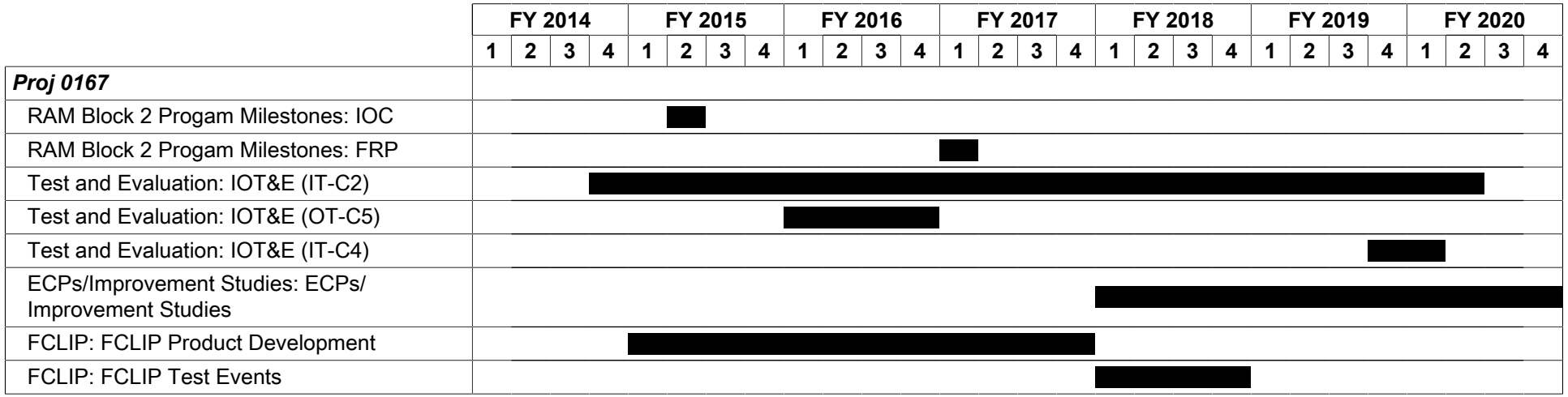

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0167 / *5in Rolling Airframe Missile*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0167				
RAM Block 2 Progam Milestones: IOC	2	2015	2	2015
RAM Block 2 Progam Milestones: FRP	1	2017	1	2017
Test and Evaluation: IOT&E (IT-C2)	4	2014	2	2020
Test and Evaluation: IOT&E (OT-C5)	1	2016	4	2016
Test and Evaluation: IOT&E (IT-C4)	4	2019	1	2020
ECPs/Improvement Studies: ECPs/Improvement Studies	1	2018	4	2020
FCLIP: FCLIP Product Development	1	2015	4	2017
FCLIP: FCLIP Test Events	1	2018	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 0173 / *NATO Sea Sparrow*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0173: *NATO Sea Sparrow*	404.880	41.271	79.232	84.344	-	84.344	94.245	132.914	109.189	81.311	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project encompasses six (6) primary efforts to enhance ship self defense:

1. Evolved SEASPARROW Missile (ESSM) Testing: A cooperative effort among 10 NATO SEASPARROW Nations and the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable ASCM threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 Vertical Launch System (VLS) to fire from a single cell with 4 ESSM (QuadPack); and modifications to the NATO SEASPARROW Surface Missile System (NSSMS) to provide ESSM capability.

2. NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 57 NSSMS radars (MK 9 Track Illuminator System) and launchers (MK 29 Guided Missile Launching System). The program eliminates all MK 57 watch stations, reduces the required system hardware.

3. NATO SEASPARROW Technical Direction Agent - MK 91 Rearchitecture: The MK 91 rearchitecture program integrates NSSMS into the SSDS architecture to provide ship missile defense utilizing an open architected system technical design agent.

4. STALKER LONG RANGE Electro Optic (EO)/Infra Red (IR)/Laser Range Finder (LRF) System: Detects, acquires, classifies, identifies and determines intent of conventional,asymmetrical and advanced threats supporting Anti-Air Warefare (AAW), Anti-Surface Warefare (ASUW), Anti-terrorism/Force Protection (AT/FP) and Overseas Contingency Operations (OCO). Long Range Visible/Infra Red Sensors and Laser Range Finder provide multi-spectral target imagery and accurate range data in non-benign environments. Classification to the horizon, visual resolution of 1ft @ 10 nm and range resolution/rate within 1 ft/1kt/nm. This effort is in response to the NAVCENT Counter Swarm Urgent Operational Need (UON) to combat Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC).

5. ESSM Block 2 Risk Reduction/ESSM Block 2 Engineering, Manufacturing, and Development (EMD): ESSM Block 2 upgrade is a cooperative effort between U.S Navy and NATO SEASPARROW Consortium Nations. ESSM Block 2 upgrade replaces the largely obsolete guidance section with a dual mode Active/Semi-Active X-Band seeker capable of defeating future threat capabilities within the existing envelope, including; smaller signatures, increased raid sizes, and adverse environments including countermeasures. Threat types include; advanced ASCMs, Anti-Ship Ballistic Missiles (ASBMs), surface and asymmetrical. The U.S. RDT&E funding accounts for 40% of the overall ESSM Block 2 Development Program. Year-to-year fluctuations in funding levels are due to the variations in contributions provided by the other eleven Nations.

6. Dual-Band Transceiver (DBT). The ESSM Block 2 missile will utilize a DBT for in-flight data communications. This two-way datalink enables control and management of the missile during flight. This DBT leverages the new DDG-1000/CVN-78 X-Band Transceiver (XBT) to incorporate the functions to support S-Band Aegis data link (i.e. a Dual Band Transceiver). This solves the S-band obsolescence issues and gives one common transceiver across the ESSM inventory.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0173 / *NATO Sea Sparrow*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Evolved SEASPARROW Missile (ESSM) testing	8.310	9.800	8.305	-	8.305
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Conducted US-unique Developmental Test/Operational Testing (DT/OT) firings from CVN 71: successful long range intercept of sea-skimming BQM-74. Conducted ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program/Aegis Baseline 9 verification testing. Began missile integration testing for Zumwalt and CVN-78 Combat Systems at Wallops Island. Provided for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives. ***FY 2015 Plans:*** Begin integration testing on Zumwalt Combat System installed on the Self-Defense Test Ship. Conduct waterfront integration testing on DDG 1000 lead ship. Continue SSDS integration testing on LHA 6 class lead ship and SDTS. Continue ESSM Aegis Baseline 9 Integration verification testing on cruisers and destroyers. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives. ***FY 2016 Base Plans:*** Continue integration testing and begin live-fire testing on the Zumwalt Combat System on the Self Defense Test Ship, conduct Waterfront Integration Testing activities and live fire testing on DDG 1000 lead ship. Perform Waterfront Integration Test activities and live-fire testing on CVN 78 combat system installed on the Self Defense Test Ship and conduct Aegis Baseline 9 firings. Participate in LHD 8 Combat System Ship Qualification Trial (CSSQT) planning and execution. ***FY 2016 OCO Plans:*** N/A					
Title: NATO SEASPARROW Objective Configuration (OC)	4.260	-	-	-	-
Articles:	-	-	-	-	-
Description: NATO SEASPARROW OC. The OC program consists of segmenting and automating the existing Mk57 Mk9 TIS and the GMLS Mk29 Mod 5. The program eliminates all Mk57 watch stations, and reduces the required system hardware and passes control directly to SSDS Mk2 Mod (3C). ***FY 2014 Accomplishments:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0173 / *NATO Sea Sparrow*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
The OC FY14 RDTE funding was allocated to complete the system engineering, software design and development activity associated with the NSSMS Mk9 TIS Radar Segmentation and Automation, including associated SSDS engineering and software development efforts. Completed the FY14 SSR/PDR and CDR SETR events. Software code and unit test proceeded from CDR culminating in initial OCP2 software FQT/ delivery in 3Q14. ***FY 2015 Plans:*** NA ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: NATO Sea Sparrow Combat System Integraton Technical Direction Agent (TDA)	0.272	0.282	0.293	-	0.293
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Performed TDA functions for NSSMS/Mk91 system. ***FY 2015 Plans:*** Continue as TDA for NSSMS/Mk91 system. Provide engineering support and support risk mitigation with the development of the solid state Mk9 Tracker Illuminator System (TIS) power upgrade and digital receiver. ***FY 2016 Base Plans:*** Continue as TDA for NSSMS/Mk91 system. Provide engineering support and support risk mitigation with the development of the solid state Mk9 TIS power upgrade and digital receiver. ***FY 2016 OCO Plans:*** N/A					
Title: STALKER LONG RANGE EO/IR/LRF SYSTEM	2.429	-	-	-	-
Articles:	-	-	-	-	-
Description: STALKER LONG RANGE EO/IR/LRF System: Detects, acquires, classifies, identifies and determines intent of conventional,asymmetrical and advanced threats supporting AAW, ASUW, (AT)/(FP) and OCO. Long Range Visible/IR Sensors and LRF provide multi-spectral target imagery and accurate range data in non-benign environments. Classification to the horizon, visual resolution of 1ft @ 10 nm and range resolution/					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0173 / *NATO Sea Sparrow*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
rate within 1 ft/1kt/nm. This effort is in response to the NAVCENT Counter Swarm UON to combat (FAC/FIAC). Stalker will replace the Lowlight Level Television (LLTV) in the fleet. ***FY 2014 Accomplishments:*** Transitioned Active/Passive Dual Imaging Sensor (AP/DIS IR) improvement to Stalker to improve environmetal performance via active/passive Short Wave Infra Red. System improved maritime target identification with increased range and resolution at night and through haze penetration/clutter reduction. Development completed. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Evolved SEASPARROW Blk 2 Risk Reduction/ESSM Blk 2 EMD	26.000	65.800	73.400	-	73.400
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Conducted critical experiments and analysis required to mature the design to support and conduct PDR; procured laboratory and test assets; Hardware (H/W) and Software (S/W) development; and released the E&MD RFP to prepare for entry into the Engineering, Manufacturing, and Development (E&MD) phase of the program in FY15 with a planned IOC of FY2020. ***FY 2015 Plans:*** Complete the risk reduction phase and enter into the E&MD phase of the program with a planned IOC of FY2020. Tasks include completing Milestone B; continuing critical experiments and analysis required to further mature the design to support CDR in FY16; continuing H/W and S/W development; procuring long lead material to support flight test; planning and initiating ground based test program. ***FY 2016 Base Plans:*** Continue maturing the ESSM Blk2 design during the E&MD phase of the program focusing on S/W and H/D development. Tasks include completing CDR; initiating ground based testing to include E3, CiL, and HiL;					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0173 / *NATO Sea Sparrow*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
execution of captive carry flight testing; maturation of the Models & Simulations supporting performance predictions; and completing design modifications to the Mk 21 Canister ***FY 2016 OCO Plans:*** N/A					
Title: Dual Band Transceiver (DBT)	-	3.350	2.346	-	2.346
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** FY15 DBT development efforts will go towards requirements generation and flowdown; initiate critical item development specification and conducting critical experiments to mature the technology and design. ***FY 2016 Base Plans:*** The DBT effort will transition from the Critical Design Review in FY 15 to design verification testing, including qualification testing, and development of a Technical Data Package (TDP). ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	41.271	79.232	84.344	-	84.344

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN 2307: *ESSM*	76.749	116.934	44.440	-	44.440	110.298	146.491	133.329	136.039	Continuing	Continuing
• OPN 5237: *NATO SEA SPARROW*	58.368	-	-	-	-	-	-	-	-	Continuing	Continuing
• OPN 5231: *Ship Missile Defense*	-	23.520	41.850	-	41.850	42.180	44.851	39.780	30.958	Continuing	Continuing

Remarks

Starting in FY15, funding realigned from OPN 5237 to OPN 5231.

D. Acquisition Strategy

ESSM is a directed sole source contract to Raytheon Missile Systems Company. The MK 29 ESSM Launcher Upgrade and Rearchiture (REARC)/Ship Self Defense Syste (SSDS) Integration effort was a directed sole source contract to Raytheon Company Integrated Defense System.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0173 / *NATO Sea Sparrow*

E. Performance Metrics

Successfully complete Developmental Test/Operational testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 0173 / *NATO Sea Sparrow*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ESSM Systems Engineering/Firing Spt	WR	Corona : CA	7.854	0.893	Oct 2013	0.945	Oct 2014	0.973	Oct 2015	-		0.973	-	10.665	-
NATO OC System Engineering	C/ FFPLOE	Raytheon : RI	0.668	1.287	Nov 2013	-		-		-		-	-	1.955	-
NATO OC - Software	C/ FFPLOE	Raytheon : RI	5.835	2.219	Nov 2013	-		-		-		-	-	8.054	-
Stalker System Engineering	SS/CPAF	Ball : CO	3.211	1.571	Jul 2014	-		-		-		-	-	4.782	-
Stalker Hardware Engineering	SS/CPAF	Ball : CO	14.350	-		-		-		-		-	-	14.350	-
Stalker Software Engineering	SS/CPAF	Ball : CO	2.225	0.500	Jul 2014	-		-		-		-	-	2.725	-
ESSM Primary Hardware Development	C/CPAF	Raytheon : Tuscon	193.941	-		-		-		-		-	-	193.941	-
ESSM Ancillary Hardware	Various	Various : Various	71.324	-		-		-		-		-	-	71.324	-
ESSM Blk 2 EMD	TBD	Raytheon : Tuscon	0.000	-		44.122	Jan 2015	61.392	Oct 2015	-		61.392	-	105.514	-
ESSM Blk 2 Risk reduction	SS/ FFPLOE	Raytheon : Tuscon	8.000	26.000	Oct 2013	10.150	Nov 2014	-		-		-	-	44.150	-
NATO OC Systems Engineering SPT	WR	NSWC PHD : CA	0.700	-		-		-		-		-	-	0.700	-
Dual Band Tranceiver	SS/FFP	Raytheon : Tuscon	0.000	-		2.750	Feb 2015	1.746	Dec 2015	-		1.746	-	4.496	-
		Subtotal	308.108	32.470		57.967		64.111		-		64.111	-	462.656	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NATO System TDA	SS/FP	APL : MD	1.638	0.272	Dec 2013	0.282	Dec 2014	0.293	Dec 2015	-		0.293	Continuing	Continuing	Continuing
NATO OC	SS/FFP	APL : MD	0.000	-	Nov 2013	-		-		-		-	-	-	-
Stalker -ISEA/TDA/RM&A	SS/FFP	various : various	0.397	0.353	Jul 2014	-		-		-		-	-	0.750	-
ILS/Engineering Support	Various	Various : Various	15.543	-		-		-		-		-	-	15.543	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 0173 / *NATO Sea Sparrow*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ESSM Blk 2 EMD	WR	APL : MD	0.000	-		3.880	Nov 2014	3.976	Nov 2015	-		3.976	-	7.856	-
ESSM Blk 2 EMD	WR	NSWC CL : CA	0.000	-		5.379	Nov 2014	5.574	Nov 2015	-		5.574	-	10.953	-
ESSM Blk 2 EMD	Various	Various : Various	0.000	-		2.269	Jan 2015	2.458	Jan 2016	-		2.458	-	4.727	-
NATO OC Support	WR	Dahlgren : VA	1.600	0.574	Nov 2013	-		-		-		-	-	2.174	-
Dual Band Transceiver	WR	APL : MD	0.000	-		0.200	Jan 2015	0.200	Dec 2015	-		0.200	-	0.400	-
Dual Band Tranceiver	WR	NSWC CL : CA	0.000	-		0.400	Feb 2015	0.400	Dec 2015	-		0.400	-	0.800	-
		Subtotal	19.178	1.199		12.410		12.901		-		12.901	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ESSM Developmental Test & Evaluation	WR	NSWC CL : CA	18.483	1.598	Nov 2013	1.764	Nov 2014	1.120	Nov 2015	-		1.120	Continuing	Continuing	Continuing
ESSM OPEVAL/ TECHEVAL/Test Firings	WR	Corona, IHD, Dahlgren, SNSWC, PHD) : various	13.988	1.645	Nov 2013	2.485	Nov 2014	2.072	Nov 2015	-		2.072	-	20.190	-
ESSM Developmental Test & Evaluation	SS/FFP	APL : MD	4.148	0.789	Oct 2013	0.845	Oct 2014	0.870	Oct 2015	-		0.870	Continuing	Continuing	Continuing
ESSM Test & Evaluation	C/CPAF	Raytheon : Tuscon	12.682	2.473	Nov 2013	2.678	Nov 2014	2.388	Nov 2015	-		2.388	Continuing	Continuing	Continuing
ESSM Test & Evaluation	WR	Dahlgren/PHD : VA/ CA	1.103	0.592	Nov 2013	0.647	Nov 2014	0.666	Nov 2015	-		0.666	-	3.008	-
Developmental Test & Evaluation	WR	Dahlgren : VA	0.418	-		-		-		-		-	-	0.418	-
		Subtotal	50.822	7.097		8.419		7.116		-		7.116	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 0173 / *NATO Sea Sparrow*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ESSM-Support and Performing Activity	Allot	PHD/NAWC CL/ APL : CA/MD	14.207	0.220	Oct 2013	0.336	Oct 2014	0.116	Oct 2015	-		0.116	Continuing	Continuing	Continuing
ESSM-Travel	Allot	Program Office : VA	3.027	0.100	Oct 2013	0.100	Oct 2014	0.100	Oct 2015	-		0.100	Continuing	Continuing	Continuing
ESSM-Misc	Various	various : various	2.149	-		-		-		-		-	-	2.149	2.065
NATO Travel/Misc	Various	Program Office : various	1.931	0.180	Oct 2013	-		-		-		-	-	2.111	-
Engineering Support	Various	Various : Various	5.458	-		-		-		-		-	-	5.458	-
Stalker Travel	Allot	Program Office : VA	0.000	0.005	Oct 2013	-		-		-		-	-	0.005	-
		Subtotal	26.772	0.505		0.436		0.216		-		0.216	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	404.880	41.271		79.232		84.344		-		84.344	-	-	-

Remarks

Various used for multiple vendors and location under threshold.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0173 / *NATO Sea Sparrow*

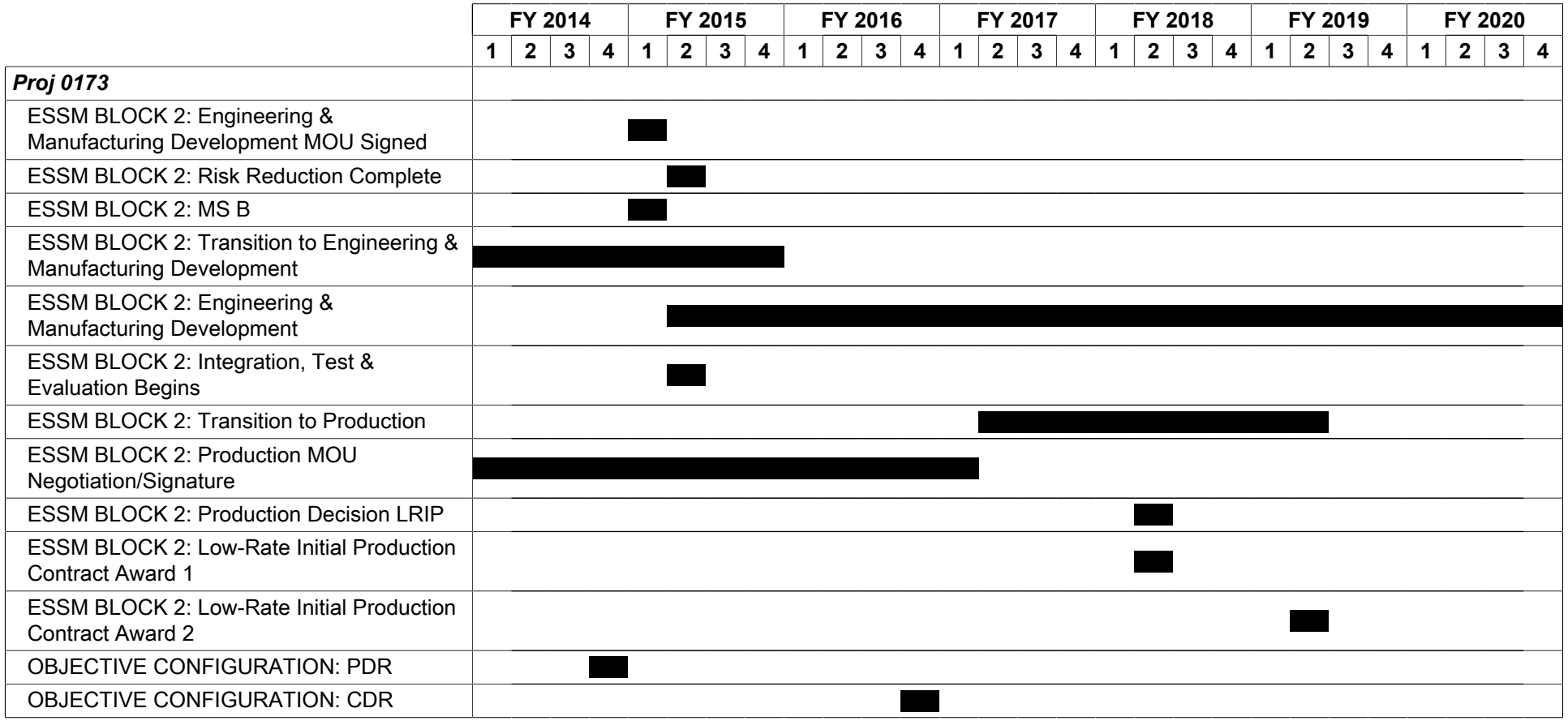

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 0173 / *NATO Sea Sparrow*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0173				
ESSM BLOCK 2: Engineering & Manufacturing Development MOU Signed	1	2015	1	2015
ESSM BLOCK 2: Risk Reduction Complete	2	2015	2	2015
ESSM BLOCK 2: MS B	1	2015	1	2015
ESSM BLOCK 2: Transition to Engineering & Manufacturing Development	1	2014	4	2015
ESSM BLOCK 2: Engineering & Manufacturing Development	2	2015	4	2020
ESSM BLOCK 2: Integration, Test & Evaluation Begins	2	2015	2	2015
ESSM BLOCK 2: Transition to Production	2	2017	2	2019
ESSM BLOCK 2: Production MOU Negotiation/Signature	1	2014	1	2017
ESSM BLOCK 2: Production Decision LRIP	2	2018	2	2018
ESSM BLOCK 2: Low-Rate Initial Production Contract Award 1	2	2018	2	2018
ESSM BLOCK 2: Low-Rate Initial Production Contract Award 2	2	2019	2	2019
OBJECTIVE CONFIGURATION: PDR	4	2014	4	2014
OBJECTIVE CONFIGURATION: CDR	4	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	Project (Number/Name) 9081 / *Phalanx CIWS SEARAM*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9081: *Phalanx CIWS SEARAM*	-	-	5.000	1.000	-	1.000	0.500	18.000	41.342	22.709	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Close in Weapon System (CIWS) Technology Refresh and Next Generation CIWS: CIWS fleet population exceeds 250 systems onboard nearly every USN surface combatant. In addition, CIWS continues to be installed on new construction surface ships with life expectancies of 25+ years. Basic system architecture is 20+ years old and is in need of technology refresh in order to avoid hardware obsolescence, maintain/improve reliability, and provide affordable spare parts to achieve acceptable Operational Availability for the next 20+ years. In conjunction with Technology Refresh, a Next Generation CIWS effort (trade studies and initial requirements definition) is planned in order to define the follow-on CIWS system for future ships (and potentially backfit on newer fleet units) that can defeat the emerging anti-ship cruise missile threats at a lower overall life cycle cost. Given the sheer number of CIWS system deployed across the fleet and the amount of time it would take to upgrade existing installations to any Next Generation CIWS configuration, both Technology Refresh efforts (fielded to the fleet through overhauled CIWS Systems) and Next Generation CIWS efforts are required to be executed at same time in order to maintain existing CIWS capability while Next Generation CIWS is developed and begins fielding.

SeaRAM CIWS is to be deployed onboard DDG 64, 71, 75, and 78 in order to provide additional capability to meet emerging threats. Efforts include development, qualification, and testing of software and hardware modifications in order to support fielding on these AEGIS class ships.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Tech Refresh & Next Gen CIWS / SeaRAM on DDG Class	-	5.000	1.000	-	1.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: Conduct trade studies and initial requirements definition for CIWS Technology Refresh (for fielding via retrofit kit and overhaul) and Next Generation CIWS with goal of improving system operational availability and performance.					
FY 2016 Base Plans: Non-recurring engineering efforts for integration/fielding of SeaRAM CIWS onboard DDG 64, 71, 75, and 78.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	5.000	1.000	-	1.000

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 9081 / *Phalanx CIWS SEARAM*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The MK 15 Close-In Weapons System (CIWS) is a fast reaction, rapid fire, computer controlled radar system utilizing either a 20mm gun (Phalanx) or a Rolling Airframe Missile (RAM) to meet its primary mission of providing Anti-Ship Missile (ASM) defense. Funding provides support for efforts related to Technology Refresh (for current fleet population) and Next Generation CIWS (for future and retrofit installations) as well as efforts related to the integration/installation of SeaRAM CIWS in DDG 64, 71, 75, and 78. This work will be completed via sole source contracts to the CIWS Design Agent (Raytheon Missile Systems).

E. Performance Metrics

Successfully complete trade studies and initial requirements definition for Technology Refresh/Next Generation CIWS and efforts related integration/installation of SeaRAM CIWS in DDG class ships.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 9081 / *Phalanx CIWS SEARAM*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech Refresh & Next Generation CIWS	SS/CPFF	Raytheon Missile Systems : Tucson, AZ	0.000	-		4.500	Feb 2015	-		-		-	-	4.500	4.500
SeaRAM CIWS on DDG Class	SS/CPFF	Raytheon Missile Systems : Various	0.000	-		-		1.000	Nov 2015	-		1.000	0.500	1.500	1.500
		Subtotal	0.000	-		4.500		1.000		-		1.000	0.500	6.000	6.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analysis - Tech Refresh & Next Generation CIWS	Various	Various : Various	0.000	-		0.500	Feb 2015	-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.500		-		-		-	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		5.000		1.000		-		1.000	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 9081 / *Phalanx CIWS SEARAM*

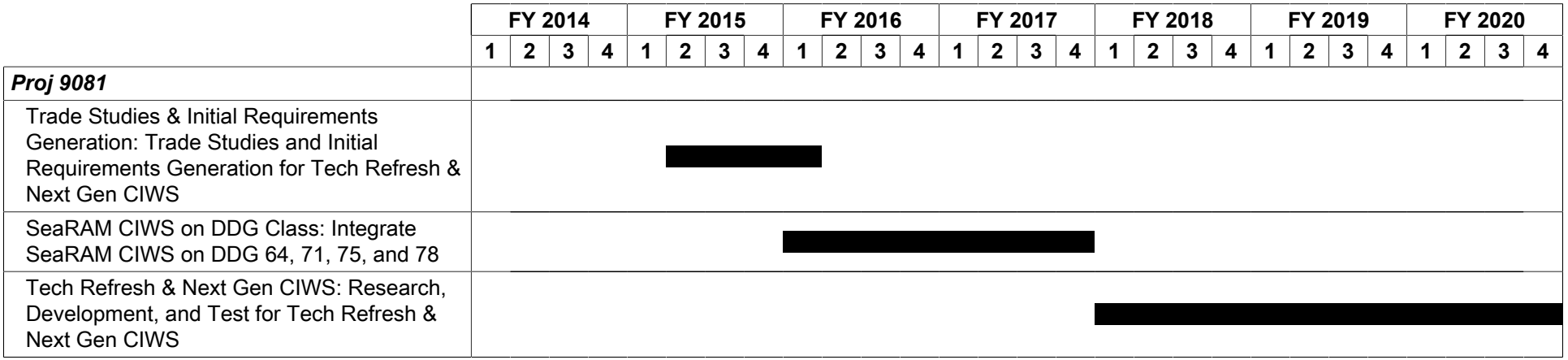

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604756N / *Ship Self Def (Engage: Hard Kill)*	**Project (Number/Name)** 9081 / *Phalanx CIWS SEARAM*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9081				
Trade Studies & Initial Requirements Generation: Trade Studies and Initial Requirements Generation for Tech Refresh & Next Gen CIWS	2	2015	1	2016
SeaRAM CIWS on DDG Class: Integrate SeaRAM CIWS on DDG 64, 71, 75, and 78	1	2016	4	2017
Tech Refresh & Next Gen CIWS: Research, Development, and Test for Tech Refresh & Next Gen CIWS	1	2018	4	2020