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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,404.229	105.984	84.518	47.492	-	47.492	56.149	68.035	38.030	38.637	Continuing	Continuing
0167: <i>5in Rolling Airframe Missile</i>	351.583	7.959	17.371	11.086	-	11.086	6.597	4.917	4.796	4.891	Continuing	Continuing
0173: <i>NATO Sea Sparrow</i>	995.785	65.070	38.869	31.206	-	31.206	49.552	63.118	33.234	33.746	Continuing	Continuing
2070: <i>OTH Missile</i>	56.861	10.766	8.278	5.200	-	5.200	0.000	0.000	0.000	0.000	0.000	81.105
9999: <i>Congressional Adds</i>	0.000	22.189	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.189

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), as well as a Surface-to Surface Strike weapon system. Missile and system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (0173), Rolling Airframe Missile (RAM) (0167), Advanced Low Cost Munition Ordnance (ALaMO) (0243 and C772), Over-The-Horizon (OTH) missile (2070), and Phalanx Close-In Weapon System (CIWS) SeaRAM (9081). Missile improvements include improved kinematic performance plus advanced seeker and low elevation fusing/warhead capability improvements. CIWS System improvements include Technology Refresh for current and future fleet population. ALaMO (0243 and C772) qualifies a guided 57mm projectile with an active seeker for United States Navy (USN) use. ALaMO provides enhanced lethality against Fast In-shore Attack Craft (FIAC) when compared to existing 57mm ammunition.

B. Program Change Summary (\$ in Millions)

	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	107.427	71.818	45.519	-	45.519
Current President's Budget	105.984	84.518	47.492	-	47.492
Total Adjustments	-1.443	12.700	1.973	-	1.973
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-7.300			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.443	0.000			
• Program Adjustments	0.000	0.000	4.698	-	4.698
• Rate/Misc Adjustments	0.000	0.000	-2.725	-	-2.725

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Appropriation/Budget Activity
 1319: *Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)*

R-1 Program Element (Number/Name)
 PE 0604756N / *Ship Self Def (Engage: Hard Kill)*

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *ALaMO block 1 projectile*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

FY 2022	FY 2023
22.189	20.000
22.189	20.000
22.189	20.000

Change Summary Explanation

Development efforts for Next Gen Launching systems will mostly be funded by FY 2023. Minor follow-on efforts for completion of system testing and delivery will be provided ion FY 2024. Development efforts for MK9 CWTI Transmitter Replacement will be ramping down by FY 2023 as well with transition to production and fielding.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0167: 5in Rolling Airframe Missile	351.583	7.959	17.371	11.086	-	11.086	6.597	4.917	4.796	4.891	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Rolling Airframe Missile (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 consisting of both a missile launcher and dual mode, passive radio frequency/infrared seeker missiles. The RAM Block 2B missile defends against highly maneuverable Anti-Ship Cruise Missile (ASCM) threats and emerging complex raid attacks utilizing an advanced seeker and Missile-to-Missile Link (MML) while maintaining all the proven capabilities of previous RAM variants (Block 0/1/1A/2/2A): accurate terminal guidance, proven lethality, and post-launch fire and forget capability.

RAM FY 2024 through FY 2028 efforts will focus on integration efforts with the new Combat Systems baselines for Aircraft Carriers and Amphibious platforms (Ship Self Defense System (SSDS) Baseline 12 - RAM Integration) to include electromagnetic environmental effects (E3) testing to verify all RAM variants can be loaded and fired from SSDS platforms. Preliminary investigations to support RAM integration on Aegis platforms (Destroyers) will also be conducted. Additionally, efforts will correct issues found during RAM Block 2B development flight tests and include evolutionary agile software development that delivers critical missile software based capability packages to counter emerging threats such as hypersonic weapons.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Rolling Airframe Missile Block 2 Development and Test	7.959	17.371	11.086	0.000	11.086
Articles:	-	-	-	-	-
FY 2023 Plans: In support of integration efforts, perform regression flight testing to verify RAM Block 2A and 2B missile hardware and software raid performance improvements in SSDS BL 12. Conduct electromagnetic environmental effects (E3) testing for all fielded RAM variants with new US Navy emitters such as AN/SPY-6 (EASR) and AN/SLQ-32(V)7 (SEWIP Block 3), which is a requirement for combat systems certification. Build virtual RAM models for integrated combat system end-to-end development which enables rapid missile and combat system software development, certification and deployment to counter new and emerging threats. Initiate evolutionary agile development efforts that deliver critical missile software based capability packages to counter emerging threats such as hypersonic weapons.					
FY 2024 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0167 / <i>5in Rolling Airframe Missile</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>In support of integration efforts, conclude regression flight testing analysis to verify RAM Block 2B missile hardware and software raid performance improvements in SSDS BL 12. Conduct electromagnetic environmental effects (E3) testing for all fielded RAM variants with new US Navy emitters such as AN/SPY-6 (EASR) and AN/SLQ-32(V)7 (SEWIP Block 3), which is a requirement for combat systems certification. Build virtual RAM models for integrated combat system end-to-end development which enables rapid missile and combat system software development, certification and deployment to counter new and emerging threats. Conduct preliminary investigations to support RAM integration on Aegis platforms. Continue evolutionary agile development efforts that deliver critical missile software-based capability packages to counter emerging threats such as hypersonic weapons.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 included funding for Block 2B flight testing. No funding for flight tests are included in FY 2024.</p>					
Accomplishments/Planned Programs Subtotals	7.959	17.371	11.086	0.000	11.086

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• WPN 2242: RAM	73.015	92.131	114.639	-	114.639	117.251	120.277	121.506	123.936	Continuing	Continuing
• OPN 5231: <i>Ship Missile Support Equipment</i>	7.025	7.053	7.188	-	7.188	7.339	7.511	7.669	7.822	Continuing	Continuing

Remarks

D. Acquisition Strategy
The RAM Program uses directed sole source contracts with Raytheon Missiles & Defense, Tucson, AZ.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0604756N / Ship Self Def (Engage: Hard Kill)				0167 / 5in Rolling Airframe Missile							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Block 2 Upgrade	C/CPAF	Various : Various	154.650	0.000		0.000		0.000		-		0.000	0.000	154.650	-
Primary Hardware Dev/Blk 1	Various	Various : Various	10.081	0.000		0.000		0.000		-		0.000	0.000	10.081	-
FCLIP	WR	PHD : CA	0.777	0.000		0.000		0.000		-		0.000	0.000	0.777	-
FCLIP	SS/CPFF	AECOM : VA	1.226	0.000		0.000		0.000		-		0.000	0.000	1.226	-
Raid ECP	SS/CPFF	Raytheon : Tucson/ Louisville	77.366	2.000	Dec 2021	0.000		0.000		-		0.000	0.000	79.366	-
FCLIP	SS/CPFF	Raytheon : Tucson/ Louisville	40.563	0.000		0.000		0.000		-		0.000	0.000	40.563	-
Raid ECP	SS/CPFF	JHU/APL : MD	1.115	0.000		0.000		0.000		-		0.000	0.000	1.115	-
FCLIP	WR	China Lake : CA	8.735	0.000		0.000		0.000		-		0.000	0.000	8.735	-
Raid ECP	WR	China Lake : CA	4.306	0.000		0.000		0.000		-		0.000	0.000	4.306	-
FCLIP	SS/CPFF	JHU/APL : MD	0.692	0.000		0.000		0.000		-		0.000	0.000	0.692	-
Raid ECP	WR	PHD : CA	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Raid ECP	SS/CPFF	AECOM : VA	1.960	0.000		0.000		0.000		-		0.000	0.000	1.960	-
FCLIP	WR	PT Mugu : CA	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
FCLIP	WR	NSWC DD : VA	0.844	0.000		0.000		0.000		-		0.000	0.000	0.844	-
Various	Various	Various : Various	10.334	0.000		0.000		0.000		-		0.000	0.000	10.334	-
2B Integration	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	0.927	Nov 2021	0.000		0.000		-		0.000	0.000	0.927	-
2B Integration	WR	China Lake : CA	0.000	0.638	Oct 2021	0.000		0.000		-		0.000	0.000	0.638	-
2B Integration	C/CPIF	Lockheed Martin : NJ	0.000	0.997	Dec 2022	0.000		0.000		-		0.000	0.000	0.997	-
2B Integration	WR	NSWC DD : VA	0.000	1.317	Oct 2021	0.000		0.000		-		0.000	0.000	1.317	-
2B P3I	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	2.080	Mar 2022	0.000		0.000		-		0.000	0.000	2.080	-
Block 2 Test Support	C/CPFF	Raytheon : Tucson	18.787	0.000		4.100	Oct 2022	0.000		-		0.000	0.000	22.887	-
Block 2 Test Support	WR	China Lake/PHD : CA	13.414	0.000		2.082	Dec 2022	0.000		-		0.000	0.000	15.496	-
RAM Evolutionary Agile	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	0.000		2.237	Oct 2022	2.674	Oct 2023	-		2.674	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0604756N / Ship Self Def (Engage: Hard Kill)				0167 / 5in Rolling Airframe Missile							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
RAM Evolutionary Agile	WR	China Lake : CA	0.000	0.000		0.680	Oct 2022	0.824	Nov 2023	-		0.824	Continuing	Continuing	Continuing
RAM Evolutionary Agile	SS/CPFF	Cydecor : VA	0.000	0.000		0.425	Oct 2022	0.505	Oct 2023	-		0.505	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	SS/CPFF	Raytheon : Tucson/Louisville	0.000	0.000		3.392	Dec 2022	4.308	Oct 2023	-		4.308	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	C/PIF	Lockheed Martin : NJ	0.000	0.000		2.140	Mar 2023	0.000		-		0.000	0.000	2.140	-
SSDS BL 12 - RAM Integration	WR	China Lake : CA	0.000	0.000		0.985	Dec 2022	1.916	Oct 2023	-		1.916	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	WR	NSWC DD : VA	0.000	0.000		0.975	Jan 2023	0.450	Oct 2023	-		0.450	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	SS/CPFF	Cydecor : VA	0.000	0.000		0.355	Oct 2022	0.409	Nov 2023	-		0.409	Continuing	Continuing	Continuing
Subtotal			344.925	7.959		17.371		11.086		-		11.086	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Studies and Analysis	Various	Various : Various	1.810	0.000		0.000		0.000		-		0.000	0.000	1.810	-
Subtotal			1.810	0.000		0.000		0.000		-		0.000	0.000	1.810	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	China Lake : PHD, CA	4.701	0.000		0.000		0.000		-		0.000	0.000	4.701	-
Subtotal			4.701	0.000		0.000		0.000		-		0.000	0.000	4.701	N/A

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0167 / <i>5in Rolling Airframe Missile</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0167				
Raid ECP: Raid ECP Test Events	1	2022	1	2024
2B: Evolutionary Agile Development	2	2022	4	2028
SSDS BL 12: RAM Integration	1	2022	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>				Project (Number/Name) 0173 / <i>NATO Sea Sparrow</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0173: <i>NATO Sea Sparrow</i>	995.785	65.070	38.869	31.206	-	31.206	49.552	63.118	33.234	33.746	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project encompasses ten (10) primary efforts to enhance ship self-defense:

1. Evolved SEASPARROW Missile (ESSM) Blk 1 is a cooperative effort among nine (9) NATO SEASPARROW Nations and the U.S. to provide crucial battlespace defense and fire power against the fast, low altitude, highly maneuverable Anti-Ship Cruise Missile (ASCM) threat. Modifications were made to both the MK 41 Vertical Launch System (VLS) to fire from a single cell with 4 ESSM (QuadPack) and the NATO SEASPARROW Surface Missile System (NSSMS), fielding ESSM Blk 1 onboard CVN 68 (Aircraft Carrier), LHD 1 (Multipurpose Amphibious Assault Ship), LHA 7 (Multipurpose Amphibious Assault Ship), CG 47 (Guided Missile Cruiser), and DDG 51 (Guided Missile Destroyer) class ships. ESSM Blk 1 integration efforts continue to bring the capability to CVN 78 and DDG 1000.
2. Blk 2 Follow-on Test & Evaluation (FOT&E): The ESSM Blk 2 Milestone Decision Authority mandated that ESSM Blk 2 conduct FOT &E on Ship Self-Defense System (SSDS) platform and fully support DDG Flight III operational testing. There will be planning efforts to support US Combat Systems integration testing including but not limited to: Aegis Baseline 9 and 10 integration, SSDS integration, FFG platform integration testing as required. This includes support with appropriate ESSM Blk 2 Missile Simulator Unit (MSU) with operator support.
3. NATO SEASPARROW Technical Direction Agent (TDA): The MK 57 NATO SEASPARROW Surface Missile Systems (NSSMS) provides a rapid response, integrated, self-defense missile capability. The Technical Direction Agent (TDA) is tasked with providing systems engineering and technical support for the MK 9 Tracker Illuminator System (TIS), and MK 29 Guided Missile Launching System (GMLS). The Combat System (CS) TDA is tasked with providing an Analysis of Alternatives (AoA), in the form of studies, analysis, and evaluations of hardware and software improvements. This task encompasses requirements development, and assessment, artifact and document reviews, technical meetings, and test requirement development, participation in test and system integration events, and post test analysis. RDT&E funding is necessary to complete AoA activities and develop recommendations, based on data, for improvements to the MK 9 TIS and MK 29 GMLS.
4. ESSM Technology Roadmap & Studies: The ESSM Blk 2 Missile completed development in 2021, achieved IOC in December 2021 and transitioned to in-service. In order to achieve performance not realized during the execution of Engineering and Manufacturing Development (E&MD), pace the threat, and remain a viable weapon system, the missile and its supporting combat system components will require improvements. This effort will perform studies to identify technology candidates, find new manufacturing techniques, and determine applicability to the NATO SEASPARROW Project Office (NSPO) managed Combat System Elements for future hardware or software improvements to either the Consortium's combat systems or the missile, or both. RDT&E funding represented will develop and maintain an ESSM System roadmap and support specific studies to determine candidate combat system and/or missile performance and manufacturing efficiency improvements. Computer simulation updates will be needed to support the performance studies for future improvements.

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0173 / <i>NATO Sea Sparrow</i>
<p>5. Other Development (Blk 2 Obsolescence and Redesign, CSTB and Digital Datalink): Test Bed is the end-to-end integration of Combat System (CS) element models using Higher Level Architecture (HLA) to help assess a ship's ability to defend itself. Test Bed is maximizing the use of tactical code-based models in conjunction with physics-based environmental models to represent at sea performance of ships and their combat systems. The goal is to develop a system of systems modeling for multiple use cases including System Development, System Integration, Developmental Test (DT) or Operational Test (OT) for a variety of ships and weapon systems. This effort is to integrate ESSM Block 2 Tactical Simulation (ETS) model into the Combat Systems Testbed and Enterprise Testbed. This effort also includes improvements needing to be made in ETS based on the studies exploring missile launcher and MK 9 Tracker-Illuminator System (TIS) redesign in order to respond to obsolescence issues affecting ESSM systems on all CVN, LHA, and LHD class ships.</p> <p>6. Evolved SEASPARROW Missile (ESSM) Blk 2 Software Upgrades: The ESSM Blk 2 Missile completed development in 2021, achieved IOC in December 2021 and transitioned to in-service. In order to pace the threat and remain a viable weapon, the missile requires software improvements. This effort will provide the performance updates and fixes to the ESSM Block 2 missile software. The software updates will be identified as a result of the Initial Operational Test and Evaluation (IOT&E) phase and during Runs for the Record (RfR) that will be completed in support of IOC, from performance improvements studies, from identified software issues, during FOT &E flight test results and as a result of new hardware and combat system changes. These changes will form the first opportunity to improve the baseline ESSM Block 2 missile, and are intended to represent an approximately annual software update employing agile software management principles, which will allow for correction of deficiencies identified through Initial Operational Test and Evaluation, and support the completion of Follow On Operational Test and Evaluation objectives.</p> <p>7. C-Band Telemetry Upgrade: Director Operational Test and Evaluation (DOT&E) directed operational testing in Aegis Capability Baseline (ACB)-20 requires multiple missiles in flight simultaneously to assess stream raids by threat systems. Current SM-6 and Evolved SEASPARROW Missile (ESSM) Block 2 Telemeters operate in the S-band where Radio Frequency (RF) bandwidths are limited for Telemetry (TM) collection on the range. The current spectrum allocation and range infrastructure only supports TM collections for 3 active missiles in flight on the range at one time. The new requirement is due to the large number of missiles to support planned testing. The weapons and range are required to move telemetry into the C-Band where bandwidth exists to support required TM collections. Engineering has already certified that this is achievable.</p> <p>8. MK 9 Continuous Wave Tracking Illuminator (CWTI) (Transmitter) Replacement: The MK 57 NATO SEASPARROW Surface Missile System (NSSMS) supports the SPARROW missile family with Semi-Active illumination in the form of Continuous Wave Tracking Illuminator (CWTI). The CWTI enables the MK 9 Tracker-Illuminator System (TIS) to support self-defense mission requirements and paces emerging threats. The MK 9 TIS CWTI replacement eliminates obsolescence issues and increases the Radio Frequency (RF) power output to provide improved tracking, with uplink, performance, and higher Evolved SEASPARROW Missile (ESSM) probability of guidance (PG) on low RADAR Cross Section (RCS) threats. Additionally, a replacement of 1960's United States Air Force (USAF) Radar Test Set (RTS) adapted for the United States Navy (USN) will be required to fulfill maintenance requirements and enhance additional frequency selections and ensure post-launch RF missile support for noise and uplink requirements.</p> <p>9. Next Generation Tracker-Illuminator System (TIS): An upgrade is required to existing ship's infrastructure to provide Semi-Active (SAX) illumination source that improves Evolved SEASPARROW Missile (ESSM) Block 2 probability of guidance (PG) when using Transition Section Guidance (TSG) Mode 0, 3 (current), or 5 (future). Additionally, an upgraded MK 9 TIS will improve Combat System probability of raid annihilation (PRA) for TSG Modes 0 and 5 (future). The receiver and tracking elements have reached the limits of their ability to support system requirements and deficiencies have been noted in Follow-on Operational Test and Evaluation</p>		

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0173 / <i>NATO Sea Sparrow</i>
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(FOT&E) out-briefs. This effort will develop (as required), qualify, test, and integrate modernized technology (equipment/ components) as part of the MK 9 TIS (e.g., Transmitter Group, Antenna, and Signal Processor).

10. Next Generation Launching System: Develop, qualify, test, and integrate an upgrade/replacement to the legacy MK 29 Guided Missile Launching System (GMLS). This upgrade/replacement improves environmental protection for Guided Missile Assemblies (GMA) (reducing corrosion), Grade A Near Miss Shock (NMS) compliance, reduces manning requirements for loading/unloading operations, mitigates long term supportability issues, addresses obsolescence, reduces the life cycle cost for operating and maintaining the MK 132 Launcher, and reduces the cost and time for Evolved SEASPARROW Missile (ESSM) in-service refurbishment, or re-certification. This upgrade/replacement contains design margin to allow for growth, where the MK 132 Guided Missile Launcher is maximized today precluding ESSM Block 2 deployment.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Title: Evolved Sea Sparrow Missile (ESSM) Blk 1 Testing</p> <p align="right">Articles:</p> <p>FY 2023 Plans: NIA. Due to decrease in overall control funding was reduced to \$0. Previous plans in FY 2023 included supporting DDG 1000, DDG 1001, CVN 78, and emerging radar requirements.</p> <p>FY 2024 Base Plans: N/A</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>	6.094	0.000	0.000	0.000	0.000
<p>Title: BLK 2 Follow-on Test & Evaluation (FOT&E)</p> <p align="right">Articles:</p> <p>FY 2023 Plans: Base plans for FY 2023 include conducting separate ESSM Blk 2 integration events with optimized systems including SSDS, Aegis, and FFG LBTS and ships. Conduct planning for executing DT/OT on an optimized system.</p> <p>FY 2024 Base Plans: FY 2024 planning includes DT/OT test events for optimized capability to be deployed across all MK 41 platforms employing ESSM Block 2, as well as testing to support SSDS initial fielding. Completion of these tests is necessary to complete Initial Operational Test and Evaluation (IOT&E) Phase 2, which will be required to</p>	4.744	4.717	3.647	0.000	3.647

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0173 / NATO Sea Sparrow

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>generate the Beyond LRIP report to complete Full Rate Production Decision Review and Full Operational Capability milestones.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of funding from FY 2023 to FY 2024 due to a reduction in the following efforts; Program Test and Evaluation requirements will begin transitioning from providing technical support (technical interchanges meetings and Land Based Test Site integration test events) for implementation by AEGIS Baseline 9, 10, SSSDs, and FFG, to conducting live fire test events and analysis for all associated combat systems.</p>					
<p>Title: NATO Sea Sparrow Combat System Integraton Technical Direction Agent (TDA)</p> <p align="right">Articles:</p> <p>FY 2023 Plans: The CS TDA will continue to provide independent analysis and recommendations for emergent issues and engineering changes for deployed systems. The CS TDA will provide continued support of artifact and document reviews, technical meetings, and test requirement development for the MK 9 TIS CWTI replacement. The CS TDA will continue research into tracking algorithms and refining digital signal processing elements to support MK 9 TIS evolution. The CS TDA will also continue to evolve a local simulation capability with an ability to inject real target information to continue assessment of radar performance in support of mission area tasks within the integrated Combat System. The TDA will also support studies and analysis for integration of the Next Generation Launching System with the ESSM Block 2 missile to satisfy requirements for deployment fielding concurrence such as safety studies and topside integration.</p> <p>FY 2024 Base Plans: The CS TDA will continue to provide support in the form of studies, analysis, and evaluations of hardware and software improvements for the MK 9 Tracker Illuminator System (TIS) and independent analysis and recommendations for emergent issues and engineering changes for deployed systems. The CS TDA will also support artifact and document reviews, technical meetings, test requirement development, participation in test and system integration events, and post test analysis for the MK 9 TIS CWTI replacement. The TDA will also support studies and analysis for integration of the Next Generation Launching System with the ESSM</p>	1.965	2.336	2.382	0.000	2.382
	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0173 / <i>NATO Sea Sparrow</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Block 2 missile to satisfy requirements for deployment fielding concurrence such as safety studies and topside integration.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase of funding from FY 2023 to FY 2024: Funding required to maintain steady effort on Technical Direction Agent support for all NATO SEASPARROW Combat Systems integration efforts as upgrades of multiple MK 57 system elements, such as the MK 9 Tracker Illuminator System and MK 29 Guided Missile Launching System will have commenced development, testing, and modernization activities.</p>					
<p>Title: ESSM Blk 2 Technology Roadmap and Studies</p> <p align="right">Articles:</p> <p>FY 2023 Plans: The ESSM Block 2 contractors and field activities will continue to perform necessary updates to the Technology Roadmap and conduct specific studies as directed by the Government, support meetings, create Plan Of Actions and Milestones (POA&Ms) for capability improvements, and deliver reports as necessary. Prospective updates will include, technology assessment with respect to maturity and risk; understanding the specifics of production impacts; assessing the impacts to ship integration impacts; and continuing to take into account the evolution of the threat. Maintenance of the Technology Roadmap must assess all these factors and provide an updated Roadmap periodically as appropriate.</p> <p>FY 2024 Base Plans: The ESSM Block 2 contractors and field activities will continue to perform necessary updates to the Technology Roadmap and conduct specific studies as directed by the Government, support meetings, create Plan Of Actions and Milestones (POA&Ms) for capability improvements, and deliver reports as necessary. Prospective updates will include, technology assessment with respect to maturity and risk; understanding the specifics of production impacts; assessing the impacts to ship integration impacts; and continuing to take into account the evolution of the threat. Maintenance of the Technology Roadmap must assess all these factors and provide an updated Roadmap periodically as appropriate.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	1.287 -	1.210 -	1.234 -	0.000 -	1.234 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
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Increase of funding from FY 2023 to FY 2024: Small increase due to inflation factors.

Title: Other Development	1.501	2.500	3.396	0.000	3.396
Articles:	-	-	-	-	-

FY 2023 Plans:
Develops ET-17 software upgrade which is essential to fielding of ESSM Block 2 missile with AEGIS Baseline 10. Funds RMD to evaluate the SM Missile Family concept and software code, and to develop an additional Initialization Message (IM) and software within the missile to support ESSM Block 2 missile integration aligned to the DDG Flight III AEGIS Baseline 10 fielding plan. Additional funding required for APL and field activities support the upgrade. Funds CSEDS and At-SEA testing and updates the Interface Control Documentation.

FY 2024 Base Plans:
Complete integration of all NATO Seasparrow elements into CSTB and Enterprise Testbeds. This effort is required to support the verification and validation of advanced AEGIS and SSDS baselines employing the ESSM Block 2 missile. Complete the qualification and testing necessary for fielding of ET-17 capability.

FY 2024 OCO Plans:
N/A

FY 2023 to FY 2024 Increase/Decrease Statement:
Increase of funding from FY 2023 to FY 2024: Planned to align with increased number of labor required to support completion of integrating into Combat Systems and Enterprise Test Beds to support fielding of ESSM with advanced AEGIS and SSDS baselines, as well as completion of work necessary to certify fielding of ET-17 capability.

Title: ESSM Blk 2 Software Upgrades	4.719	7.500	7.570	0.000	7.570
Articles:	-	-	-	-	-

FY 2023 Plans:
The ESSM Block 2 Prime Contractor will continue to perform necessary software updates that are resulting from performance improvements studies, from software issues resulting from Initial Operational Test and Evaluation (IOT&E) flight test results and as a result of new hardware and combat system changes as prioritized and directed by the Government. The effort will require the Prime Contractor to support meetings, create POA&Ms,

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>develop algorithms, build proof of concepts and estimates for the capability improvements, and deliver software reports, test plans/procedures, and test inspection reports as necessary.</p> <p>FY 2024 Base Plans: The ESSM Block 2 Prime Contractor will continue to perform necessary software updates that are resulting from performance improvements studies, from software issues resulting from Initial Operational Test and Evaluation (IOT&E) flight test results and as a result of new hardware and combat system changes as prioritized and directed by the Government. The effort will require the Prime Contractor to support meetings, create POA&Ms, develop algorithms, build proof of concepts and estimates for the capability improvements, and deliver software reports, test plans/procedures, and test inspection reports as necessary.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase of funding from FY 2023 to FY 2024: Small increase anticipated to sustain steady effort of continuous updates to correct issues identified through Initial Operational Test and Evaluation and Fleet introduction.</p>					
<p>Title: C-Band Telemetry Upgrades</p> <p align="right">Articles:</p>	10.586	4.334	4.616	0.000	4.616
<p>FY 2023 Plans: Completes qualification testing. Submits supplier purchase orders for C-Band TDTS kits and TAAs. Completes Test Equipment upgrades to support kit development. Delivers Supplier kits. Initiates flight test round build up.</p> <p>FY 2024 Base Plans: Completes the ESSM Block 2 and C band telemeter qualification efforts and initial flight testing and telemetry verification. Completion of this work in FY 2024 is required for alignment to Flight 3 DDG & AEGIS Baseline 10 testing schedules.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase of funding from FY 2023 to FY 2024: Increase due to maturation of the project development allowing transition to production qualification activities.</p>	-	-	-	-	-
<p>Title: MK 9 CWTI (Transmitter) Replacement</p>	21.850	3.374	1.006	0.000	1.006

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p align="right"><i>Articles:</i></p> <p>FY 2023 Plans: Plans for FY 2023 include continuing NRE efforts to develop the MK 9 TIS CWTI replacement with the support of the IPT. This effort will continue with the Critical Design Review (CDR) and the initial subsystem assembly for the in-house Environmental Qualification Test (EQT) units, Engineering Development Model (EDM) and First Article Unit (FAU). Additionally, the Government will commence the establishment of a land-based test site (LBTS) at Yorktown, Naval Munitions Command (NMC) and upgrade of the test capability at NSWC PHD's Surface Warfare Engineering Facility (SWEF).</p> <p>FY 2024 Base Plans: Continue development efforts for the MK 9 TIS CWTI replacement including system assembly, manufacturer/supplier interface, integration and testing. The in-house EQT units will be subjected to environmental qualification testing, the EDM unit will undergo performance qualification testing and the FAU will undergo Factory Acceptance Testing. The RDT&E portion of the contract will conclude when the government takes receipt of the Engineering, Manufacturing and Development (EMD) data, and the EDM & FAU units. Government Integration testing with the MK 9 TIS will then commence at a LBTS with support of the ISEA and field activities.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of funding from FY 2023 to FY 2024: Decrease anticipated as Firm Fixed Price Contract efforts ramp down with completion of development efforts and transition to production and fielding.</p>	-	-	-	-	-
<p>Title: Next Generation Tracker- Illuminator System (TIS)</p> <p align="right"><i>Articles:</i></p> <p>FY 2023 Plans: Progress studies in support of Analysis of Alternatives and industry research to examine technologically mature solutions that will meet existing NATO SeaSparrow Surface Missile System requirements for a Tracker-Illuminator while also ensuring capability to pace mid-term evolving threats. This system will be required to perform tracking of the full spectrum of Air and Missile Defense threat set as well as terminal illumination to support missile guidance in final phase of intercept in a challenged Electromagnetic environment.</p> <p>FY 2024 Base Plans:</p>	0.978	0.999	3.604	0.000	3.604

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Continue and conclude studies in support of Analysis of Alternatives and industry research to identify technologically mature candidates that will meet existing NATO SeaSparrow Surface Missile System requirements for a Tracker- Illuminator while also providing capability to pace mid-term evolving threats. This system will be required to perform tracking of the full spectrum of Air and Missile Defense threat set as well as terminal illumination to support missile guidance in final phase of intercept in a challenged Electromagnetic environment.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase of funding from FY 2023 to FY 2024: Ramp up is planned in FY 2024 to begin generating Top Level Requirements to compete award via an Other Transaction Authority for development of a next generation TIS to provide capital ship (LHD/LHA/CVN) self defense engagement capability against emerging threats.</p>					
<p>Title: Next Generation Launching System</p> <p align="right">Articles:</p>	11.346	11.899	3.751	0.000	3.751
<p>FY 2023 Plans: Conclusion of Phase 1 will occur and the start of Phase 2 (starting in FY 2023) will begin. Phase 2 consists of design qualification testing, software verification and validation as well as integration testing. Qty 2. Prototypes, supporting equipment, and missile hardware will be procured to support the qualification effort. Notional test plans includes shock, vibration, effects of electromagnetic radiation, transportation and insensitive munition testing.</p> <p>FY 2024 Base Plans: Phase 2 will come to conclusion with the completion of testing, intergration and software verification and validation. Phase 3 will begin and culminate in FY 2024. Phase 3 is the report out and delivery of all required hardware, software, and documentation to include the final delivery of a level 3 technical data package (TDP) to government.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Decrease of funding from FY 2023 to FY 2024: Decrease in FY 2024 is due to the fact that development efforts will be mostly funded by FY 2023. Minor follow on efforts for the completion of system testing and delivery of completed documentation will be provided in FY 2024.					
Accomplishments/Planned Programs Subtotals	65.070	38.869	31.206	0.000	31.206

C. Other Program Funding Summary (\$ in Millions)											
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• WPN 2307: <i>ESSM</i>	239.309	276.335	290.129	-	290.129	522.391	513.145	548.752	561.593	Continuing	Continuing
• OPN 5231: <i>Ship Missile Defense</i>	42.283	45.025	33.546	-	33.546	34.263	35.074	35.898	36.639	Continuing	Continuing
• OMN 1D4D: <i>NATO Seasparrow</i>	31.201	35.960	47.119	-	47.119	51.058	55.118	56.256	57.251	0.000	416.335

Remarks
OMN funding is for ESSM Blk 1, NSSMS, & RIM-7; ESSM Blk 2 In-Service Support began in FY 2021.

D. Acquisition Strategy
Competitively awarded MK 9 CWTI.
Competitively awarding the Next Generation Launching System.
Plan to competitively award Next Generation TIS.

ESSM Blk 2 EMD is a directed sole source contract to Raytheon Missile Systems Company.

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ESSM Systems Engineering/Firing Spt	WR	Corona : CA	13.291	0.999	Dec 2021	0.000	Dec 2022	0.000		-		0.000	0.000	14.290	-
ESSM Systems Engineering/Firing Spt Blk 2	WR	Corona : CA	0.200	0.202	Dec 2021	0.251	Dec 2022	0.000		-		0.000	0.000	0.653	-
NATO OC System Engineering	C/FFPLOE	Raytheon : RI	1.955	0.000		0.000		0.000		-		0.000	0.000	1.955	-
NATO OC - Software	C/FFPLOE	Raytheon : RI	8.054	0.000		0.000		0.000		-		0.000	0.000	8.054	-
Stalker System Engineering	WR	NSWC Crane : IN	4.782	0.000		0.000		0.000		-		0.000	0.000	4.782	-
Stalker Hardware Engineering	WR	NSWC Crane : IN	14.350	0.000		0.000		0.000		-		0.000	0.000	14.350	-
Stalker Software Engineering	WR	NSWC Crane : IN	2.725	0.000		0.000		0.000		-		0.000	0.000	2.725	-
ESSM Primary Hardware Development	C/CPAF	Raytheon : Tuscon	193.941	0.000		0.000		0.000		-		0.000	0.000	193.941	-
ESSM Ancillary Hardware	Various	Various : Various	71.324	0.000		0.000		0.000		-		0.000	0.000	71.324	-
ESSM Blk 2 EMD	C/CPIF	Raytheon : Tuscon	341.816	0.000		0.000		0.000		-		0.000	0.000	341.816	-
I-Stalker Systems Engineering	WR	NSWC Crane : Crane, IN	4.690	0.000		0.000		0.000		-		0.000	0.000	4.690	-
TTP	SS/FFP	Raytheon : Tuscon	49.980	0.000		0.000		0.000		-		0.000	0.000	49.980	-
ESSM Blk 2 Risk reduction	SS/FFPLOE	Raytheon : Tuscon	44.150	0.000		0.000		0.000		-		0.000	0.000	44.150	-
NATO OC Systems Engineering SPT	WR	NSWC PHD : CA	0.700	0.000		0.000		0.000		-		0.000	0.000	0.700	-
Dual Band Tranceiver	SS/FFP	Raytheon : Tuscon	6.155	0.000		0.000		0.000		-		0.000	0.000	6.155	-
Studies/Technology Roadmap	TBD	Raytheon : Tuscon	0.375	1.287	Dec 2021	1.210	Dec 2022	1.234	Dec 2023	-		1.234	0.000	4.106	-
Other Development	TBD	Raytheon : Tucson	6.103	1.501	Dec 2021	2.500	Dec 2022	3.396	Dec 2023	-		3.396	0.000	13.500	-
Software Upgrades	TBD	Raytheon : Tucson	1.500	4.719	Dec 2021	7.500	Dec 2022	7.570	Dec 2023	-		7.570	0.000	21.289	-

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
C-Band Telemetry upgrade	TBD	TBD : TBD	6.234	10.586	Nov 2021	4.334	Nov 2022	4.616	Dec 2023	-		4.616	0.000	25.770	-
CMBRE Adaptor	TBD	NG : NA	4.000	0.000		0.000		0.000		-		0.000	0.000	4.000	-
Illuminator System	TBD	TBD : TBD	0.960	0.978	Jan 2022	0.999	Jan 2023	3.604	Dec 2023	-		3.604	0.000	6.541	-
Launching System	TBD	TBD : TBD	1.431	11.346	Feb 2022	11.899	Feb 2023	3.750	Dec 2023	-		3.750	0.000	28.426	-
I-Stalker Systems Engineering	WR	NRL : TBD	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-
I-Stalker Systems Engineering	WR	APL : TBD	0.525	0.000		0.000		0.000		-		0.000	0.000	0.525	-
MK 9 CWTI Replacment	TBD	NSWC PHD : CA	0.000	0.000		0.000		1.006	Nov 2023	-		1.006	0.000	1.006	-
MK 9 CWTI Replacment	C/FFP	SAAB : NY	0.000	21.850	Jan 2022	3.374	Jan 2023	0.000		-		0.000	0.000	25.224	-
Subtotal			780.041	53.468		32.067		25.176		-		25.176	0.000	890.752	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
NATO System TDA	SS/FP	APL : MD	7.777	1.965	Jan 2022	2.336	Jan 2023	2.382	Jan 2024	-		2.382	Continuing	Continuing	Continuing
Stalker -ISEA/TDA/RM&A	SS/FFP	various : various	0.750	0.000		0.000		0.000		-		0.000	0.000	0.750	-
ILS/Engineering Support	Various	Various : Various	15.543	0.000		0.000		0.000		-		0.000	0.000	15.543	-
ESSM Blk 2 EMD	WR	APL : MD	20.454	0.000		0.000		0.000		-		0.000	0.000	20.454	-
ESSM Blk 2 EMD	WR	NAWC CL : CA	27.315	0.000		0.000		0.000		-		0.000	0.000	27.315	-
ESSM Blk 2 EMD	Various	Various : Various	11.581	0.000		0.000		0.000		-		0.000	0.000	11.581	-
I-Stalker Platform Integration	WR	Norfolk Naval Shipyard (NNSY) : Norfolk, VA	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	-
I-Stalker Platform Integration	C/BA	NSWC Dahlgren : Dahlgren, VA	0.847	0.000		0.000		0.000		-		0.000	0.000	0.847	-
I-Stalker Platform Integration	C/BA	NSWC Crane : Crane, IN	1.124	0.000		0.000		0.000		-		0.000	0.000	1.124	-

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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
I-Stalker Platform Integration	WR	PSNSY : Puget Sound, WA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
NATO OC Support	WR	Dahlgren : VA	2.174	0.000		0.000		0.000		-		0.000	0.000	2.174	-
Dual Band Transceiver	WR	APL : MD	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-
Dual Band Transceiver	WR	NAWC CL : CA	1.600	0.000		0.000		0.000		-		0.000	0.000	1.600	-
Subtotal			90.865	1.965		2.336		2.382		-		2.382	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Test & Evaluation (OT&E)	WR	NAWC CL : CA	24.881	0.945	Dec 2021	0.000	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	WR	NAWC CL : CA	0.250	0.501	Dec 2021	0.901	Dec 2022	0.921	Nov 2023	-		0.921	0.000	2.573	-
Operational Test & Evaluation (OT&E)	WR	Corona, IHD, Dahlgren, SNSWC, PHD) : Various	23.354	1.125	Nov 2021	0.000	Nov 2022	0.000		-		0.000	0.000	24.479	-
Live Fire Test & Evaluation (LFT&E)	WR	Corona, IHD, Dahlgren, SNSWC, PHD) : Various	0.150	0.302	Nov 2021	0.502	Nov 2022	0.560	Nov 2023	-		0.560	0.000	1.514	-
Operational Test & Evaluation (OT&E)	SS/FFP	APL : MD	7.617	0.620	Nov 2021	0.000	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	C/CPAF	Raytheon : Tuscon	30.123	1.501	Dec 2021	0.000	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	C/CPAF	Raytheon : Tuscon	0.599	2.911	Dec 2021	2.064	Dec 2022	1.064	Dec 2023	-		1.064	0.000	6.638	-
Operational Test & Evaluation (OT&E)	WR	Dahlgren/PHD : VA/CA	4.432	0.113	Nov 2021	0.000	Dec 2022	0.000		-		0.000	0.000	4.545	-
Operational Test & Evaluation (OT&E)	WR	Dahlgren : VA	0.418	0.000		0.000		0.000		-		0.000	0.000	0.418	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0173 / <i>NATO Sea Sparrow</i>
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Test & Evaluation (OT&E)	WR	NSWC Crane : IN	0.564	0.000		0.000		0.000		-		0.000	0.000	0.564	-
Subtotal			92.388	8.018		3.467		2.545		-		2.545	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ESSM-Support and Performing Activity	Allot	PHD/NAWC CL/ APL : CA/MD	18.370	0.691	Nov 2021	0.000	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
ESSM-Travel	Allot	Program Office : VA	3.827	0.100	Oct 2021	0.100	Oct 2022	0.100	Oct 2023	-		0.100	Continuing	Continuing	Continuing
ESSM-Misc	Various	various : various	2.149	0.000		0.000		0.000		-		0.000	0.000	2.149	2.065
NATO Travel/Misc	Various	Program Office : various	2.111	0.000		0.000		0.000		-		0.000	0.000	2.111	-
ESSM-Support and Performing Activity Blk 2	Allot	PHD/NAWC CL/ APL : CA/MD	0.301	0.828	Nov 2021	0.899	Nov 2022	1.003	Nov 2023	-		1.003	0.000	3.031	-
Engineering Support	Various	Various : Various	5.458	0.000		0.000		0.000		-		0.000	0.000	5.458	-
I-Stalker Engineering Support	Various	TMB : Various	0.275	0.000		0.000		0.000		-		0.000	0.000	0.275	-
Subtotal			32.491	1.619		0.999		1.103		-		1.103	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		995.785	65.070	38.869	31.206	-	31.206	Continuing	Continuing	N/A

Remarks
Various used for multiple vendors and location under threshold.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 0173 / <i>NATO Sea Sparrow</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0173				
ESSM DEVELOPMENT: Other Development	1	2022	4	2028
ESSM DEVELOPMENT: ESSM Blk 2 Software Upgrades	1	2022	4	2028
ESSM DEVELOPMENT: C-Band Telemetry Upgrades	1	2022	4	2024
ESSM DEVELOPMENT: MK9 CWTI (Transmitter) Replacement	1	2022	3	2024
ESSM DEVELOPMENT: CMBRE Adaptor Development	1	2022	3	2022
ESSM DEVELOPMENT: Next Generation Tracker-Illuminator System (TIS)	3	2023	3	2026
ESSM DEVELOPMENT: Next Generation Launching System	2	2023	3	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 2070 / <i>OTH Missile</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2070: <i>OTH Missile</i>	56.861	10.766	8.278	5.200	-	5.200	0.000	0.000	0.000	0.000	0.000	81.105
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Over-The-Horizon (OTH) Missile funds competitive acquisition, testing, integrating and fielding of a modern, technologically mature Over-the-Horizon Missile Launch System (OTH-MLS) surface to surface missile capability will be installed onto commissioned and in-production Littoral Combat Ship Variants/Frigate(LCS/FFG)beginning FY 2019.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: OTH-MLS Test and Evaluation and Systems Engineering	10.766	8.278	5.200	0.000	5.200
Articles:	-	-	-	-	-
FY 2023 Plans:					
<ul style="list-style-type: none"> - Continue to provide OTH-MLS missile and fire control subject matter expertise to support the program office with program execution. - Continue Electro-Static discharge (ESD) and Electro-magnetic vulnerability (EMV) testing to obtain safety certification. - Complete system environmental testing. - Support Fleet and User evaluation. - Continue with OTH-MLS and Combat System integration growth. - Obtain OTH WS Full Rate Production (FRP) decision. - Complete EOD tests as mandated by DoD EOD and - Continued Insensitive Munitions (IM) testing will be executed in accordance with the OTH-MLS IM test plan. IM testing includes fast/slow energetics cook offs, bullet / fragment impact testing, sympathetic reaction testing, and missile drop tests. - Continue safety testing to support the WSESRB - Continue Live Fire Test and Evaluation (LFT&E) program. - Continue OT in accordance with the OTH-MLS Test and Evaluation Master Plan (TEMP.) - Complete operational flight tests. 					
FY 2024 Base Plans:					
<ul style="list-style-type: none"> - Continue to provide OTH-MLS missile and fire control subject matter expertise to support the program office with program execution. 					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 2070 / <i>OTH Missile</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Support Fleet and User evaluation - Continue with OTH-MLS and Combat System integration growth. - Continue Live Fire Test and Evaluation (LFT&E) program. - Continue OT in accordance with the OTH-MLS Test and Evaluation Master Plan (TEMP.) - Complete operational flight tests. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 decreases as program as program completes integration and safety testing. FY 2024 funds then completion of Operational Tests and Life Fire Test and Evaluation warhead arena test and sled tests.</p>					
Accomplishments/Planned Programs Subtotals	10.766	8.278	5.200	0.000	5.200

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN /5231: <i>Ship Missile</i>	10.490	13.231	6.625	-	6.625	8.946	8.944	4.435	4.524	Continuing	Continuing
<i>Support Equipment/OTH Missile</i>											
• WPN 2292: <i>Naval Strike Missile (NSM)</i>	52.377	59.034	29.925	-	29.925	28.719	30.208	31.736	32.604	Continuing	Continuing
• PMC/2292: <i>Naval Strike Missile (NSM)</i>	0.000	174.369	169.726	-	169.726	170.845	169.913	169.878	170.428	0.000	1,025.159
• PMC/2212: <i>GBASM NSM</i>	105.186	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	105.186

Remarks
 OPN 5231 is a shared BLI - Funding only reflects OTH-MLS cost elements.
 PMC 2292 is a new LI previously executed out of PMC 2212. LI will procure same NSM configuration as the DON.
 PMC 2212 only reflects NSMs funded in FY 2022.

D. Acquisition Strategy
 The OTH-MLS is an Acquisition Category (ACAT) II level weapon system production and sustainment program to provide the current Littoral Combat Ship (LCS) variants and Frigate (FFG) ships with an Over-the-Horizon Surface-To-Surface Missile (SSM) capability. The Navy awarded a seven-year competitive contract awarded to Raytheon May 31, 2018 that procures material, procures test assets, and provides installation support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)	Project (Number/Name) 2070 / OTH Missile
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OTH All Up Round (AUR) Technical Design Agent	WR	NAWC/WD : China Lake, CA	9.037	2.600	Oct 2021	1.540	Oct 2022	2.000	Oct 2023	-		2.000	0.000	15.177	-
OTH Simulation and Analysis	WR	NSWC/COR : Corona, CA	1.699	0.413	Oct 2021	0.431	Oct 2022	0.200	Oct 2023	-		0.200	0.000	2.743	-
OTH Weapon System Design Agent	WR	NSWC/DD : Dahlgren, VA	3.337	0.310	Oct 2021	0.822	Oct 2022	0.100	Oct 2023	-		0.100	0.000	4.569	-
OTH Test & Evaluation / ILS	WR	NSWC/PHD : Port Hueneme, CA	2.753	0.976	Oct 2021	0.800	Oct 2022	0.000		-		0.000	0.000	4.529	-
OTH Weapon System Safety	WR	NSWC/DD : Dahlgren, VA	0.830	0.550	Oct 2021	0.600	Oct 2022	0.000		-		0.000	0.000	1.980	-
Weapons Systems Engineering Planning	FFRDC	JHU/APL : Laurel, MD	1.027	0.000	Dec 2021	0.000	Dec 2022	0.000		-		0.000	0.000	1.027	-
OEM Engineering Support	C/CPFF	Raytheon : Tucson, AZ	8.280	1.000	Nov 2021	0.680	Nov 2022	0.200	Nov 2023	-		0.200	0.000	10.160	-
Test & Evaluation Assets	C/FFP	Raytheon : Tucson, AZ	11.339	0.000		0.000		0.000		-		0.000	0.000	11.339	-
Range & Target	WR	Pt. Mugu : Pt. Mugu, CA	7.250	0.000	Oct 2021	2.652	Aug 2023	0.000		-		0.000	0.000	9.902	-
Test Asset Procurement	C/FFP	Raytheon : Tucson, AZ	7.353	2.500	Jul 2022	0.000	Nov 2022	0.000		-		0.000	0.000	9.853	-
OTH WEAPON System safety	WR	NSWC/IHD : Indian Head, MD	0.030	0.100	Jun 2022	0.000		0.000		-		0.000	0.000	0.130	-
Test and Eval	WR	OTF : Norfolk, VA	0.293	0.102	Jun 2022	0.000		0.000		-		0.000	0.000	0.395	-
OTH Safety Testing	WR	White Sands : White Sands, NM	0.733	0.500	Aug 2022	0.000		0.000		-		0.000	0.000	1.233	-
Survivability & Functionality Testing	MIPR	AMTC : Redstone Arsenal/ AL	0.000	0.800	Jun 2022	0.000		0.000		-		0.000	0.000	0.800	-
Subtotal			53.961	9.851		7.525		2.500		-		2.500	0.000	73.837	N/A

Remarks
Required procurement of EOD, Safety and Insensitive Munition Test Assets that support continued deployment and integration efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 2070 / <i>OTH Missile</i>
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Test & Evaluation (OT&E)	WR	NSWC/PHD : Port Hueneme, CA	0.000	0.000		0.000		0.100	Oct 2023	-		0.100	0.000	0.100	-
Live Fire Test & Evaluation (LFT&E)	WR	Pt. Mugu : Pt. Mugu, CA	0.000	0.000		0.000		2.500	Aug 2024	-		2.500	0.000	2.500	-
Operational Test & Evaluation (OT&E)	WR	OTF : Norfolk, VA	0.000	0.000		0.000		0.100	Oct 2023	-		0.100	0.000	0.100	-
Subtotal			0.000	0.000		0.000		2.700		-		2.700	0.000	2.700	N/A

Remarks
Range and target funding supports planning and execution of the Naval Strike Missile flight test event starting FY 2023 through FY 2024.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OTH Contractor Acquisition Mgt Support	C/CPIF	BAH : Arlington, VA	0.621	0.100	Dec 2021	0.150	Dec 2022	0.000		-		0.000	0.000	0.871	-
OTH Program Management Support	C/CPIF	Strategic Insight : Arlington, VA	0.100	0.280	Dec 2021	0.050	Dec 2022	0.000		-		0.000	0.000	0.430	-
OTH Program Management Support	WR	PEO IWS : Arlington, VA	0.950	0.215	Oct 2021	0.178	Oct 2022	0.000		-		0.000	0.000	1.343	-
OTH Contractor Engineering Support	C/CPIF	SERCO : Arlington, VA	1.229	0.200	Dec 2021	0.225	Dec 2022	0.000		-		0.000	0.000	1.654	-
TH Contractor Acquisition Mgt Support	C/CPIF	BAE : Arlington, VA	0.000	0.120	Aug 2022	0.150	Dec 2022	0.000		-		0.000	0.000	0.270	-
Subtotal			2.900	0.915		0.753		0.000		-		0.000	0.000	4.568	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	56.861	10.766	8.278	5.200	-	5.200	0.000	81.105	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 2070 / <i>OTH Missile</i>

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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 2070																												
Limited WSESRB Planning & Execution (SSSTRP, FISTRP, HERO, IM)																												
Major Review - Milestone C Decision																												
Full Deployment WSESRB																												
System Qualification																												
Full Rate Production (FRP) Decision																												
Operational Testing																												
Contract Option 5 Award																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 2070 / <i>OTH Missile</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2070				
Limited WSESRB Planning & Execution (SSSTRP, FISTRP, HERO, IM)	1	2022	1	2023
Major Review - Milestone C Decision	1	2022	1	2023
Full Deployment WSESRB	1	2022	4	2024
System Qualification	1	2022	4	2023
Full Rate Production (FRP) Decision	1	2024	1	2024
Operational Testing	1	2022	4	2024
Contract Option 5 Award	1	2023	1	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)	Project (Number/Name) 9999 / Congressional Adds
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	22.189	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.189
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The 57mm MK 332 HE-4G Projectile significantly increases MK 110 Gun Mount lethality and effectiveness against Fast Attack Craft and Fast In-Shore Attack Craft (FAC/FIAC). ALaMO Block 1 demonstrates an alternative seeker and guidance technologies, potentially providing improved lethality compared to base ALaMO projectile.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023
Congressional Add: ALaMO block 1 projectile	22.189	20.000
FY 2022 Accomplishments: Planning of prototype contract and execution of initial government engineering analysis and baseline testing.		
FY 2023 Plans: Award development contract; complete initial design assessment and testing; perform component down select; initiate warhead optimization and guidance, navigation, and control integration.		
Congressional Adds Subtotals	22.189	20.000

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

MK 332 HE-4G Block 1 development and prototype hardware build will be awarded competitively in mid-2023 to support production and test of assets in FY 2023.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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	
Contract preparation and award	████████████████████
Government Engineering Assessments and Testing	████████████████████
Prototype Design Development	████████████████
Prototype Hardware Build	████████████████████████████████
Government Testing	████████████████████

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Contract preparation and award	3	2022	3	2023
Government Engineering Assessments and Testing	3	2022	3	2023
Prototype Design Development	2	2023	4	2023
Prototype Hardware Build	3	2023	4	2024
Government Testing	4	2023	4	2024