Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy											Date: March 2023	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0604659N *I Precision Strike Weapons Development Program*							
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	308.750	80.661	34.824	5.976	-	5.976	3.556	3.482	3.542	3.565	Continuing	Continuing
3378: *Next Generation Strike Weapons*	42.869	2.784	2.768	2.932	-	2.932	3.003	3.043	3.096	3.110	Continuing	Continuing
3407: *Air Launched Decoy Development*	265.112	61.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	326.812
3409: *Advanced Aerial Refueling Store*	0.000	4.608	6.705	2.216	-	2.216	0.000	0.000	0.000	0.000	0.000	13.529
3411: *CAD/PAD Digital Twin Modeling*	0.769	0.744	0.351	0.828	-	0.828	0.553	0.439	0.446	0.455	Continuing	Continuing
3467: *Sea Launched Cruise Missile Nuclear*	0.000	5.033	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.033
9999: *Congressional Adds*	0.000	5.792	25.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.792

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 570

A. Mission Description and Budget Item Justification

Initial and continuing development of strike weapons consisting of armament, munitions, and weapon subsystems to allow for horizontal integration among current and future weapon system capabilities to provide enhanced anti-surface and land strike capabilities in a demanding Anti-Access Area-Denial environment. This program provides for the development of weapon and weapon system technologies to address future requirements for enhanced and alternative weapon system capability requirements that include selectable output weapons, low collateral damage weapons, precision lethality weapons, area weapons, alternative warhead technology, Insensitive Munitions (IM), scaled munitions, Department of Defense (DoD) fuzing systems, sensors, extended range weapons, precision guided training rounds, aerial refueling, fuel containment, and technologies associated with cartridge actuated devices/propellant actuated devices.

PROJ 3378: Next Generation Strike Weapon (NGSW) Family of Systems (FoS) based on the NGLAW Analysis of Alternatives (AoA) completed with results briefed out to OSD. NGSW FoS more accurately reflects the surface/submarine capabilities for land-attack and maritime strike that the AoA results identified for the most capable and economic solutions fielding incrementally between 2020 and 2032. NGSW FoS Increments I and II will leverage mature as well as emerging technologies vice developing a single weapon. NGSW funding will maintain the security environment (enclave), facility, and study team to enable continuing analysis efforts across the FoS. The NGSW enclave ensures the Navy is able to maintain the most up to date modeled threats and validate the effectiveness of current US weapons, offensive and defensive, as well as future systems and concepts developed by industry and other DoD organizations. Maintaining this capability allows expedited analysis of systems and fully informed investment decisions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604659N *I Precision Strike Weapons Development Program*

PROJ 3407: Air-launched electronic warfare (EW) systems capability; through the integration of a Navy variant of the Miniature Air Launched Decoy (MALD). EW is an integral war-fighting effect supporting combatant commander integrated priorities, as well as Joint or Coalition operations. EW systems influence, deceive, disrupt, degrade, deny and destroy threats throughout the electromagnetic spectrum to airborne and air-launched systems and their operations. EW includes air-launched electronic attack (EA) as well as elements of electronic support (ES) and electronic protection (EP). EA provides self-protection capabilities to other weapon systems through active and passive measures that deceive threats to airborne and air-launched systems and their operations by using kinetic and non-kinetic means to defeat threats that rely on the electromagnetic spectrum, Radio Frequency (RF), Electro-Optical (EO), Infrared (IR). The ES capabilities support the collection, analysis, and dissemination of information related to the detection, geo-location, characterization, and identification of threats to airborne and air-launched systems and their operations. An air-launched EW system with stand-in capability increases the range and duration of EW systems while providing flexibility to commanders for employment. MALD is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of MALD has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically MALD directly contributes to building a more lethal force and is a critical enabler for joint lethality in contested environments; deterring adversaries from aggression and evolves innovative operational concepts.

PROJ 3409: Development and fielding of the Advanced Aerial Refueling Store (AARS). The AARS effort is the result of an Operation Navy (OPNAV) Future Readiness Initiative (FRI) award. The AARS will package new technologies into this next generation Aerial Refueling Store (ARS) to support both manned and unmanned (automated) aerial refueling from platforms such as F/A-18 and MQ-25. In doing so, the AARS will facilitate tanking operations to both manned and unmanned receivers and improve safety of flight by stabilizing the aerial refueling drogue and incorporating better health and diagnostics. These improvements will be accomplished by providing updated store health message content and additional health monitoring Built-In Tests (BITS) that will be sent over the 1553 data-bus. The AARS will also add receiver and drogue position data for situational awareness and support autonomous receiver engagements of unmanned systems. This in turn will increase reliability and decrease aerial refueling mishaps, providing a significant safety and readiness improvement when compared with the current ARS.

PROJ 3411: Cartridge Actuated Device / Propellant Actuated Device (CAD/PAD) Digital Twin Modeling to develop and validate models and algorithms for the Department of the Navy (DoN). The development effort is specific to Navy Air Crew Common Ejection Seats (NACES). These models will also be used to support initial service life decisions, service life extension decisions, and address obsolescence.

PROJ 3467: This project will design, develop, produce and deploy a Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N). SLCM-N is scoped to deliver an integrated flight system and to continue to advance SLCM-N capabilities to fully address requirements identified in the 2018 Nuclear Posture Review, SLCM-N Initial Capabilities Document, and examined in the Analysis of Alternatives to mitigate a lack of a sea based tactical nuclear based system.

PROJ 9999: C762 Neutron radiography (N-ray) is a critical nondestructive inspection technique used to complement X-ray. N-ray and X-ray are used to detect defects and proper assembly of a variety of energetics, including Cartridge and Propellant Actuated Devices (CAD/PADs). The US Navy intends to continue to employ neutron radiographic inspection to support energetics programs for the foreseeable future.
C880: SLCM-N This project will conduct system development and demonstration of nuclear-capable sea-launched cruise missile.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604659N *I Precision Strike Weapons Development Program*

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	89.513	84.734	7.900	-	7.900
Current President's Budget	80.661	34.824	5.976	-	5.976
Total Adjustments	-8.852	-49.910	-1.924	-	-1.924
• Congressional General Reductions	-	-0.019			
• Congressional Directed Reductions	-	-74.891			
• Congressional Rescissions	-	-			
• Congressional Adds	-	25.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.000	0.000			
• SBIR/STTR Transfer	-3.852	0.000			
• Program Adjustments	0.000	0.000	-4.158	-	-4.158
• Rate/Misc Adjustments	0.000	0.000	2.234	-	2.234

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 9999: *Congressional Adds*		
Congressional Add: *Neutron radiography technologies for energetic devices*	5.792	0.000
Congressional Add: *SLCM-N*	0.000	25.000
Congressional Add Subtotals for Project: 9999	5.792	25.000
Congressional Add Totals for all Projects	5.792	25.000

Change Summary Explanation

PROJ 3378: NGSW
Removed NGSW FY 2022 Threat Update
Added NGSW FY 2028 Threat Update Q1 2028-Q4 2028
NGSW Threat Updates Mission Modeling changed from Q1 2021-Q4 2027 to Q1 2022-Q4 2028
NGSW Threat Updates Modeling Updates changed from Q1 2021-Q4 2027 to Q1 2022-Q4 2028
Removed Technology Investment Enablers for INC I / INC II Capabilities Q4 2021-Q4 2021
Study Opportunity changed from Q1 2021-Q42027 to Q1 2022-Q4 2028
Removed Weapon/Platform Tradespace Analysis Q1 2021-Q4 2021
Removed NGSW AoA Update

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604659N *I Precision Strike Weapons Development Program*

Removed FY 2022 Security and HW Update
Removed FY 2022 Info Update
FY 2023 Security and HW Update changed from Q2 2023-Q2 2023 to Q2 2023-Q3 2023
FY 2023 Info Update changed from Q3 2023-Q3 2023 to Q3 2023-Q4 2023
FY 2024 Security and HW Update Q2 2024-Q2 2024 to Q2 2024-Q3 2024
FY 2024 Info Update Q3 2024-Q3 2024 to Q3 2024-Q4 2024
FY 2025 Security and HW Update Q2 2025-Q2 2025 to Q2 2025 Q3 2025
FY 2025 Info Update Q3 2025-Q3 2025 to Q3 2025-Q4 2025
FY 2026 Security and HW Update Q2 2026-Q2 2026 to Q2 2026-Q3 2026
FY 2026 Info Update Q3 2026-Q3 2026 to Q3 2026 Q4 2026
FY 2027 Security and HW Update Q2 2027-Q2 2027 to Q2 2027-Q3 2027
FY 2027 Info Update Q3 2027-Q3 2027 to Q3 2027-Q4 2027
Added FY 2028 Security and HW Update Q2 2028-Q3 2028
Added FY 2028 Info Update Q3 2028-Q4 2028

PROJ 3407: Air Launched Decoy Development program was officially terminated due to inability to pace threat on 22 April 2022, removing all associated investment funding in FY 2024 and out.

PROJ 3409: AARS Schedule changes from FY 2023.
CONTRACTS:
DCU/ORS Contract Award moved from FY 2022 Q3 to FY 2022 Q4
DCU/ORS OY1 Contract Award moved from FY 2023 Q3 to FY 2023 Q4
Removed Hydraulic System Contract Award OY1 from FY 2023 Q3

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy											Date: March 2023	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*				Project (Number/Name) 3378 / *Next Generation Strike Weapons*			
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**
3378: *Next Generation Strike Weapons*	42.869	2.784	2.768	2.932	-	2.932	3.003	3.043	3.096	3.110	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 570

Note

Starting with the FY 2022 Budget Cycle, the description for Project Unit 3378 was changed from Next Generation Land Attack Weapon (NGLAW) to Next Generation Strike Weapon (NGSW)

A. Mission Description and Budget Item Justification

Funding is provided for the Next Generation Strike Weapon (NGSW) Family of Systems (FoS) based on the NGLAW Analysis of Alternatives (AoA) completed with results briefed out to OSD. NGSW FoS more accurately reflects the surface/submarine capabilities for land-attack and maritime strike that the AoA results identified for the most capable and economic solutions fielding incrementally between 2020 and 2032. NGSW FoS Increments I and II will leverage mature as well as emerging technologies vice developing a single weapon. NGSW funding will maintain the security environment (enclave), facility, and study team to enable continuing analysis efforts across the FoS. The NGSW enclave ensures the Navy is able to maintain the most up to date modeled threats and validate the effectiveness of current US weapons, offensive and defensive, as well as future systems and concepts developed by industry and other DoD organizations. Maintaining this capability allows expedited analysis of systems and fully informed investment decisions. Further funding supports investment for technologies which enable Increment II capabilities (additional details are held at a higher classification).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Next Generation Strike Weapon (NGSW)	2.784	2.768	2.932	0.000	2.932
Articles:	-	-	-	-	-
FY 2023 Plans: Continue annual enclave security and IT updates, annual DSS updates for latest threat data and ownship defense, multidomain assessment, expanding the US capabilities database, mission integration, and lifecycle cost estimate updates as applicable. In support of NGSW FoS and continued Offensive Anti-Surface Warfare (OASUW) analysis, continue to modify TACSITs and threat postures for air, surface and subsurface launched weapons, identify new launch points and concepts for employment, mission integration and cost estimate updates as applicable. Conduct Threat Updates and Threat modeling to include threat systems against US					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3378 / *Next Generation Strike Weapons*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
offensive and defensive systems to ensure the enclave remains fully informed to assist senior leadership in investment decisions. Initiate update to previous NGLAW AoA and generate draft report. ***FY 2024 Base Plans:*** Continue annual security, IT and Decision Support System updates for latest threat data, launch platform (offensive and defensive) capabilities. Augment Multi-domain assessment of dynamic US capabilities, mission integration, and lifecycle cost estimate. Generate Course of Actions and corresponding warfighting tradespace analytical relationships of existing and future warfighting capabilities and ultimately generate and recommend potential ways to better utilize current force structures or invest more judiciously in future capabilities over time. Focus mainly on the inclusion and integration of potential uncrewed US assets into the analytical trade space as well as the value propositions of these investments over multiple geographical scenarios and time epocs. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY 2023 to FY 2024 increase is due to launch platform (offensive and defensive) capabilities.					
Accomplishments/Planned Programs Subtotals	2.784	2.768	2.932	0.000	2.932

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

NGSW FoS more accurately reflects the multi-domain capabilities for land-attack and maritime strike that the NGLAW AoA results identified for the most capable and economic solutions fielding incrementally between 2020 and 2032. NGSW FoS Increments I and II will leverage mature as well as emerging technologies vice developing a single weapon. NGSW funding will maintain the security environment (enclave), facility, and study team to enable continuing analysis efforts across the FoS. The NGSW enclave ensures the Navy is able to maintain the most up to date modeled threats and validate the effectiveness of current US weapons, offensive and defensive, as well as future systems and concepts developed by industry and other DoD organizations. Maintaining the enclave allows expedited analysis of systems and fully informed investment decisions.

NGSW FoS funding will support Increment II development of technologies to enable capabilities identified in the NGLAW AoA for integration in future systems. Additional details are held at a higher classification.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3378 / *Next Generation Strike Weapons*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INC II Technologies	C/CPFF	TBD : TBD	1.994	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
FMB withhold	TBD	TBD : TBD	10.900	0.000		0.000		0.000		-		0.000	0.000	10.900	-
		Subtotal	12.894	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A

Remarks

Development of technologies/components to support NGSW Increment II capabilities for integration in future systems. Additional details are held at a higher classification.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWC-WD : China Lake, CA	2.475	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Development Support- AIR 4.0M	WR	NAWC-AD : Patuxent River, MD	3.192	0.057	Jan 2022	0.051	Jan 2023	0.044	Jan 2024	-		0.044	Continuing	Continuing	Continuing
Development Support	SS/CPFF	JHU/APL : Laurel, MD	9.889	2.415	Nov 2021	0.936	Dec 2022	0.701	Nov 2023	-		0.701	Continuing	Continuing	Continuing
Weapons Control System	WR	NSWC-DD : Dahlgren, VA	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	Continuing
Development Support	WR	NSMA : JBAB, DC	12.621	0.274	Jan 2022	1.702	Feb 2023	2.093	Feb 2024	-		2.093	0.000	16.690	Continuing
Development Support	MIPR	NRO : Chantilly, VA	0.569	0.000		0.000		0.000		-		0.000	0.000	0.569	Continuing
Development Support	WR	NSWC-NPT : Newport, RI	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	Continuing
Development Support	C/CPFF	SSP : WNY, DC	0.700	0.000		0.000		0.000		-		0.000	0.000	0.700	-
		Subtotal	29.546	2.746		2.689		2.838		-		2.838	Continuing	Continuing	N/A

Remarks

Annual enclave updates, annual DSS updates, multi-domain assessment, mission integration, support OASUW analysis, conduct SLCM-N AoA study and initiate update to previous NGLAW AoA.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3378 / *Next Generation Strike Weapons*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support	WR	NAWC-AD : Patuxent River, MD	0.429	0.038	Jan 2022	0.079	Feb 2023	0.094	Feb 2024	-		0.094	Continuing	Continuing	Continuing
		Subtotal	0.429	0.038		0.079		0.094		-		0.094	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	42.869	2.784		2.768		2.932		-		2.932	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3378 / *Next Generation Strike Weapons*

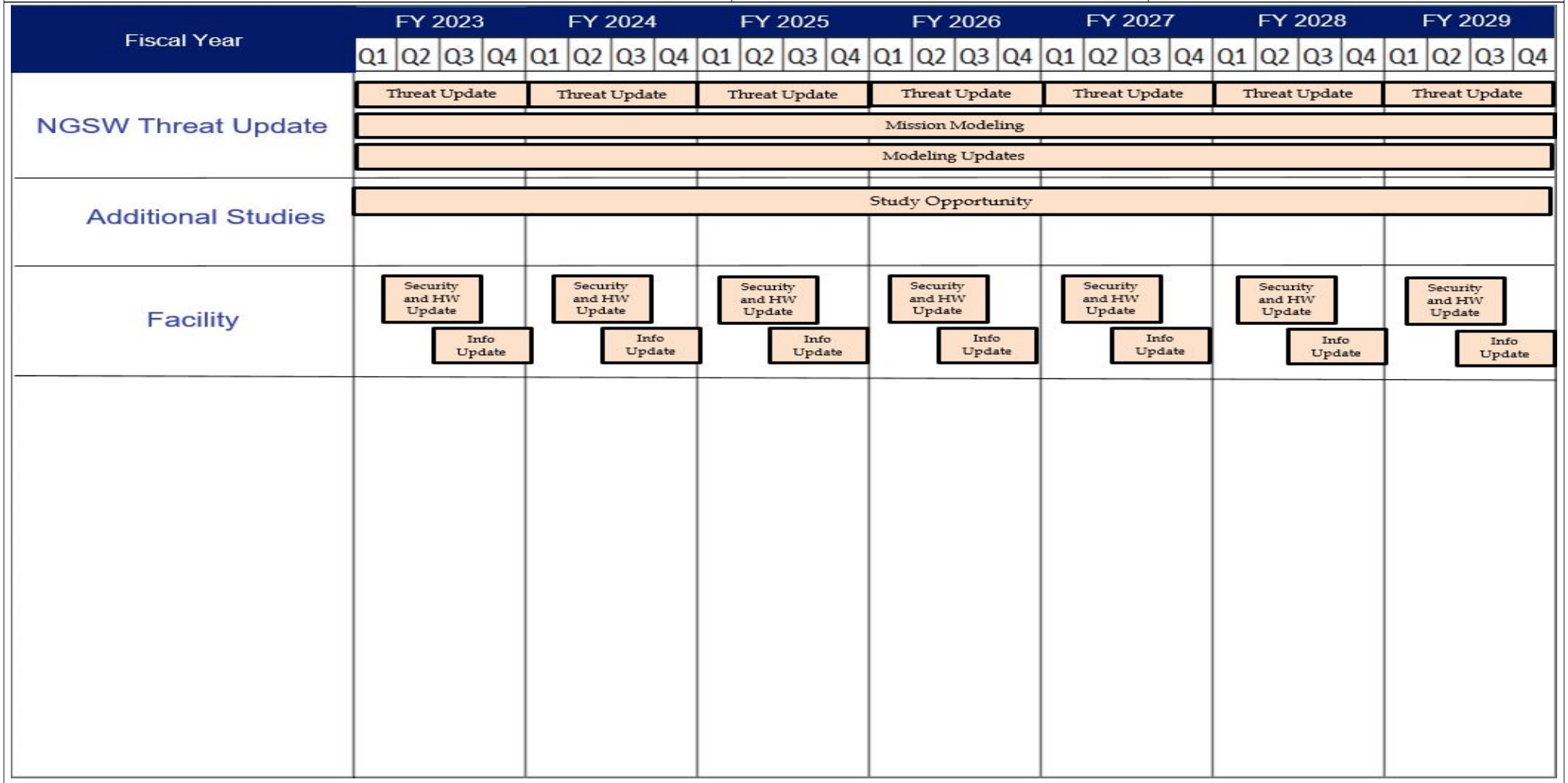

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3378 / *Next Generation Strike Weapons*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3378				
NGSW Threat Updates: NGSW FY 2023 Threat Update	1	2023	4	2023
NGSW Threat Updates: NGSW FY 2024 Threat Update	1	2024	4	2024
NGSW Threat Updates: NGSW FY 2025 Threat Update	1	2025	4	2025
NGSW Threat Updates: NGSW FY 2027 Threat Update	1	2027	4	2027
NGSW Threat Updates: NGSW FY 2028 Threat Update	1	2028	4	2028
NGSW Threat Updates: NGSW Threat Updates Mission Modeling	1	2022	4	2028
NGSW Threat Updates: NGSW Threat Updates Modeling Updates	1	2022	4	2028
Additional Studies: Study Opportunity	1	2022	4	2028
Facility: FY 2023 Security and HW Update	2	2023	3	2023
Facility: FY 2023 Info Update	3	2023	4	2023
Facility: FY 2024 Security and HW Update	2	2024	3	2024
Facility: FY 2024 Info Update	3	2024	4	2024
Facility: FY 2025 Security and HW Update	2	2025	3	2025
Facility: FY 2025 Info Update	3	2025	4	2025
Facility: FY 2026 Security and HW Update	2	2026	3	2026
Facility: FY 2026 Info Update	3	2026	4	2026
Facility: FY 2027 Security and HW Update	2	2027	3	2027
Facility: FY 2027 Info Update	3	2027	4	2027
Facility: FY 2028 Security and HW Update	2	2028	3	2028
Facility: FY 2028 Info Update	3	2028	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 3407 / *Air Launched Decoy Development*	

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
3407: *Air Launched Decoy Development*	265.112	61.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	326.812
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops a Navy variant of the Miniature Air Launched Decoy (MALD). The variant will address current and future advanced Integrated Air Defense System (IADS) threats by bringing an air-launched, stand-in EW capability to Department of the Navy (DON) suppression of enemy air defenses/destruction of enemy air defenses (SEAD/DEAD) and standoff conventional land strike. A Navy variant of MALD with stand-in capability increases the range and duration of EW systems while providing flexibility to commanders for employment. To the maximum extent possible, the Navy will utilize existing technology from the current MALD-J production line and other common components (e.g. navigation, communication, guidance and control, payload) to reduce cost, shorten development timelines and promote interoperability. OPNAV approved requirements in a Capability Development Document (CDD) 2Q2018.

This project develops a Navy variant of the Miniature Air Launched Decoy (MALD). The variant will address current and future advanced Integrated Air Defense System (IADS) threats by bringing an air-launched, stand-in EW capability to Department of the Navy (DON) suppression of enemy air defenses/destruction of enemy air defenses (SEAD/DEAD) and standoff conventional land strike. A Navy variant of MALD with stand-in capability increases the range and duration of EW systems while providing flexibility to commanders for employment. To the maximum extent possible, the Navy will utilize existing technology from the current MALD-J production line and other common components (e.g. navigation, communication, guidance and control, payload) to reduce cost, shorten development timelines and promote interoperability. OPNAV approved requirements in a Capability Development Document (CDD) 2Q2018.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Air Launched Decoy Development	60.800	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2023 Plans: N/A					
FY 2024 Base Plans: N/A					
FY 2024 OCO Plans: N/A					
Title: Miniature Air Launched Decoy	0.900	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2023 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3407 / *Air Launched Decoy Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	61.700	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The MALD-N Acquisition Category (ACAT) II program is an evolution from the previous United States Air Force (USAF) MALD-J program and is managed by Program Executive Office, Unmanned Aviation & Strike Weapons (PEO(U&W)), PMA-201 Precision Strike Weapons Program Office. PEO(U&W) has been delegated Milestone Decision Authority (MDA) and chairs quarterly Executive Steering Boards which ensure timely communications. MALD-N is being implemented as a Model 4 acquisition program. The MALD-N program will use event-driven "Knowledge Points" (KP) at key program strategic inflection points to brief progress to stakeholders throughout the program life-cycle. The program met the statutory requirements associated with Milestone B at Knowledge Point 2 (1Q FY 2019). With the removal of FY 2020 production funding, a Quick Reaction Assessment (QRA) to support an FY 2021 Early Operational Capability (EOC) will not be conducted. The MALD-N program will continue to progress towards Initial Operational Capabilities (IOC) which will be achieved through integrated test commencing in FY 2022, followed by Initial Operational Test and Evaluation (IOT&E) in FY 2024, with asset delivery in FY 2025. MALD-N will use a capabilities-based acquisition approach to characterize performance and evolve an IOC system for Fleet integration.

MALD is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of MALD has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically MALD supports greater performance of the acquisition system and is demonstrating the delivery of performance at the speed of relevance; organizational structure that supports innovation with a rapid approach that dramatically decreases the timeline from development to fielding.

MALD-N program was terminated on 22 April 2022

The MALD-N Acquisition Category (ACAT) II program is an evolution from the previous United States Air Force (USAF) MALD-J program and is managed by Program Executive Office, Unmanned Aviation & Strike Weapons (PEO(U&W)), PMA-201 Precision Strike Weapons Program Office. PEO(U&W) has been delegated Milestone Decision Authority (MDA) and chairs quarterly Executive Steering Boards which ensure timely communications. MALD-N is being implemented as a Model 4 acquisition

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3407 / *Air Launched Decoy Development*

program. The MALD-N program will use event-driven "Knowledge Points" (KP) at key program strategic inflection points to brief progress to stakeholders throughout the program life-cycle. The program met the statutory requirements associated with Milestone B at Knowledge Point 2 (1Q FY 2019). With the removal of FY 2020 production funding, a Quick Reaction Assessment (QRA) to support an FY 2021 Early Operational Capability (EOC) will not be conducted. The MALD-N program will continue to progress towards Initial Operational Capabilities (IOC) which will be achieved through integrated test commencing in FY 2022, followed by Initial Operational Test and Evaluation (IOT&E) in FY 2024, with asset delivery in FY 2025. MALD-N will use a capabilities-based acquisition approach to characterize performance and evolve an IOC system for Fleet integration.

MALD is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of MALD has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically MALD supports greater performance of the acquisition system and is demonstrating the delivery of performance at the speed of relevance; organizational structure that supports innovation with a rapid approach that dramatically decreases the timeline from development to fielding.

MALD-N program was terminated on 22 April 2022

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3407 / *Air Launched Decoy Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	SS/CPIF	Raytheon Missle Systems : Tucson, AZ	177.823	19.664	Nov 2021	0.000		0.000		-		0.000	0.000	197.487	197.487
		Subtotal	177.823	19.664		0.000		0.000		-		0.000	0.000	197.487	N/A

Remarks

FY 2023 decrease is due to program cancellation. MALD-N was officially terminated on 22 April 2022 due to inability to pace threat.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Support	WR	NAWC AD : Patuxent River, MD	16.733	3.291	Nov 2021	0.000		0.000		-		0.000	0.000	20.024	-
Government Support	WR	NAWC WD : China Lake, CA	25.703	9.701	Nov 2021	0.000		0.000		-		0.000	0.000	35.404	-
Government Support	WR	NAWC WD : Point Mugu, CA	10.005	3.311	Nov 2021	0.000		0.000		-		0.000	0.000	13.316	-
Government Support	WR	NSMA : Patuxent River, MD	5.316	4.276	Nov 2021	0.000		0.000		-		0.000	0.000	9.592	-
Various	Various	Various : Various	1.813	3.322	Nov 2021	0.000		0.000		-		0.000	0.000	5.135	-
Aircraft Integration Support	SS/CPIF	Boeing : St. Louis, MO	0.000	2.500	Dec 2021	0.000		0.000		-		0.000	0.000	2.500	2.500
NSMA	WR	NSMA : Patuxent River, MD	0.000	0.900	Apr 2022	0.000		0.000		-		0.000	0.000	0.900	-
		Subtotal	59.570	27.301		0.000		0.000		-		0.000	0.000	86.871	N/A

Remarks

FY 2023 decrease is due to program cancellation. MALD-N was officially terminated on 22 April 2022 due to inability to pace threat.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 3407 / *Air Launched Decoy Development*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC AD : Patuxent River, MD	14.493	2.113	Nov 2021	0.000		0.000		-		0.000	0.000	16.606	-
Developmental Test & Evaluation (DT&E)	WR	NAWC WD : China Lake, CA	8.485	8.974	Nov 2021	0.000		0.000		-		0.000	0.000	17.459	-
Developmental Test & Evaluation (DT&E)	WR	Eglin AFB : Eglin, FL	1.209	2.239	Nov 2021	0.000		0.000		-		0.000	0.000	3.448	-
Developmental Test & Evaluation (DT&E)	WR	Various : Various	0.000	0.030	Nov 2021	0.000		0.000		-		0.000	0.000	0.030	-
		Subtotal	24.187	13.356		0.000		0.000		-		0.000	0.000	37.543	N/A

Remarks

FY 2023 decrease is due to program cancellation. MALD-N was officially terminated on 22 April 2022 due to inability to pace threat.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Support	WR	NAWC AD : Patuxent River, MD	1.397	0.000		0.000		0.000		-		0.000	0.000	1.397	-
Government Support	WR	NAWC WD : China Lake, CA	0.597	0.000	Nov 2021	0.000		0.000		-		0.000	0.000	0.597	-
Project Management Support	C/CPFF	NAWC AD : Patuxent River, MD	1.324	1.350	Nov 2021	0.000		0.000		-		0.000	0.000	2.674	2.674
Travel	Various	NAVAIR : Patuxent River, MD	0.214	0.029	Nov 2021	0.000		0.000		-		0.000	0.000	0.243	-
		Subtotal	3.532	1.379		0.000		0.000		-		0.000	0.000	4.911	N/A

Remarks

FY 2023 decrease is due to program cancellation. MALD-N was officially terminated on 22 April 2022 due to inability to pace threat.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 3407 / *Air Launched Decoy Development*	

	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	265.112	61.700		0.000		0.000		-		0.000	0.000	326.812	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3407 / *Air Launched Decoy Development*

MALD PROGRAM SCHEDULE

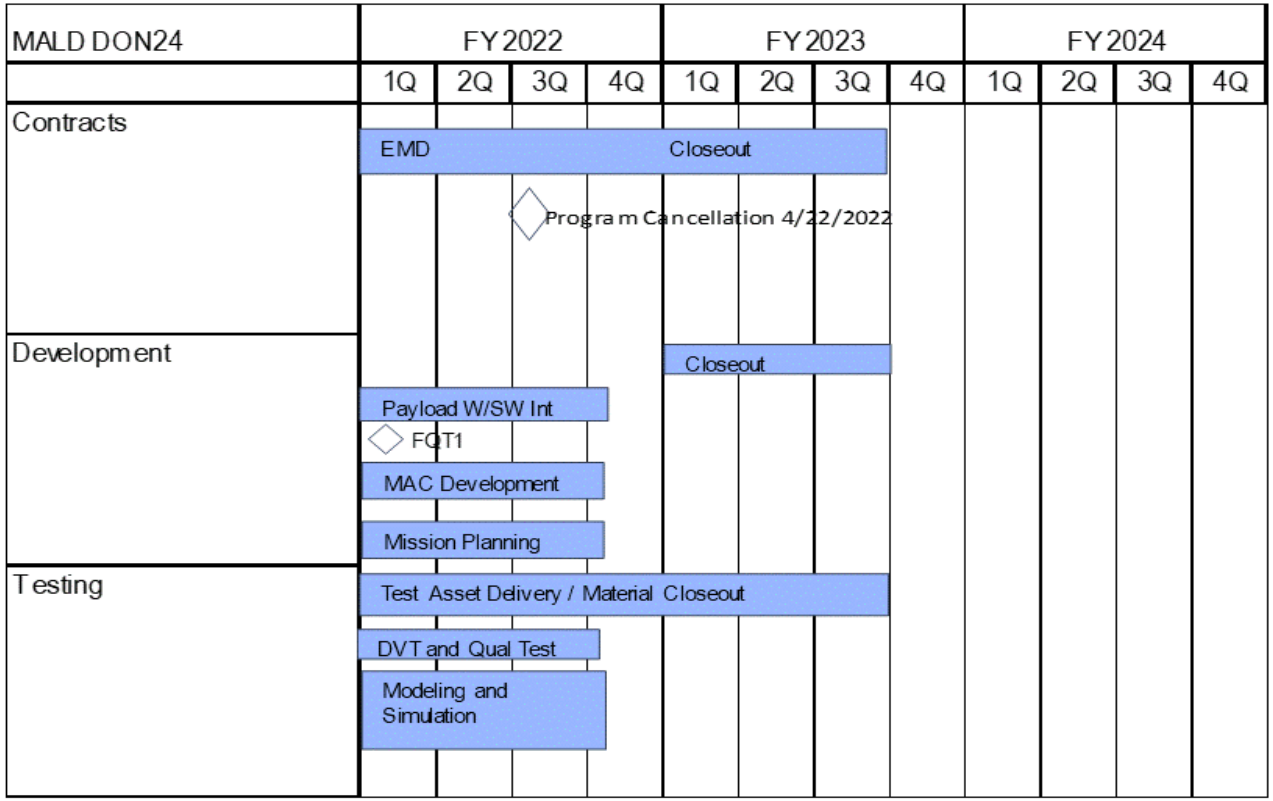

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3407 / *Air Launched Decoy Development*

MALD PROGRAM SCHEDULE OSD24

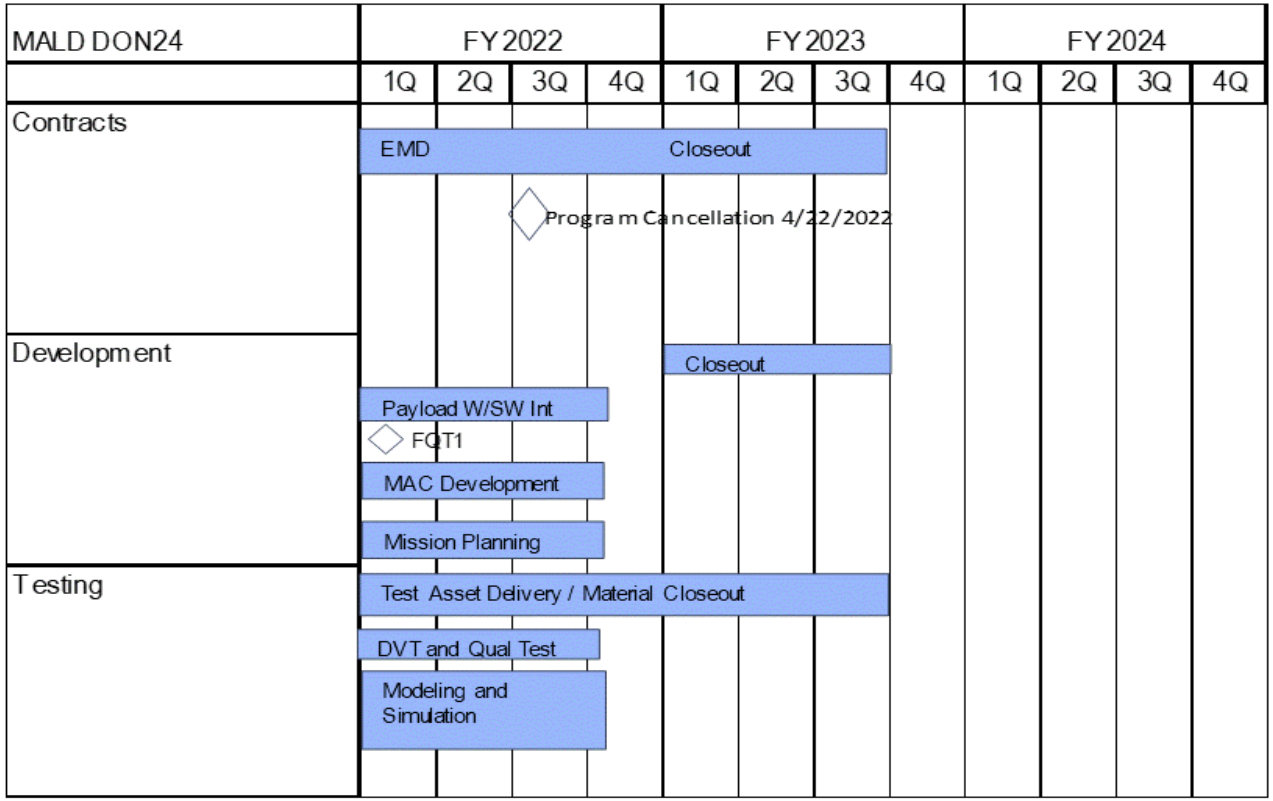

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3407 / *Air Launched Decoy Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Miniature Air Launched Decoy				
Product Development: Contract Award: EMD Contract	1	2022	3	2023
Product Development: Contract Award: EMD Closeout	1	2023	3	2023
Product Development: Contract Award: Program Cancellation	3	2022	3	2022
Product Development: Product Development: Closeout	1	2023	3	2023
Product Development: Product Development: Payload HW/SW	1	2022	4	2022
Product Development: Product Development: MAC Development	1	2022	4	2022
Product Development: Product Development: Mission Planning	1	2022	4	2022
Product Development: Product Development: FQT1	1	2022	1	2022
Test and EvaluationRow: Modeling and Simulation	1	2022	4	2022
Test and EvaluationRow: DVT and Qual Test	1	2022	4	2022
Test and EvaluationRow: Test Asset Delivery	1	2022	3	2023
Test and EvaluationRow: Material Closeout	3	2022	3	2023

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 3409 / *Advanced Aerial Refueling Store*	

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
3409: *Advanced Aerial Refueling Store*	0.000	4.608	6.705	2.216	-	2.216	0.000	0.000	0.000	0.000	0.000	13.529
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Advanced Aerial Refueling Store (AARS) is a collection of modifications to individual Aerial Refueling Store (ARS) components that will improve performance and readiness. The ARS updates will package new technologies into the existing store that will support both manned and unmanned (automated) aerial refueling from platforms such as the F/A-18 and MQ-25. These technologies include drogue stabilization, drogue positioning sensors, advanced health and diagnostic capability and real time receiver situational awareness for the unmanned mission operator. These updates will increase safety of flight, facilitate unmanned tanking operations to both manned and unmanned receivers and improve overall ARS reliability.

The Digital Controller Upgrade (DCU) with Optical Reference System (ORS) is a hardware and software update to existing components which will provide increased flight safety through monitoring/diagnostic capabilities and enhanced situational awareness to reduce mission aborts. Drogue Stabilization incorporates hardware and software updates to improve the Aerial Refueling Stores ability to hold the drogue in position for refueling actions, and also improve the ability for the receiving platform to maneuver into position for refueling which decreases the risk of refueling mishaps, reduces mission aborts which improves operational efficiency and safety. Hydraulic System Improvements will update hardware to increase hydraulic efficiency by eliminating high failure rate components, improving fuel offload and reducing power demands on the Ram Air Turbine (RAT).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Advanced Aerial Refueling Store	4.608	6.705	2.216	0.000	2.216
Articles:	-	-	-	-	-
FY 2023 Plans: FY 2023 funding will continue the DCU and ORS development of the existing Aerial Refueling Stores. Funding provided for the development includes the surrogate flight testing of the DCU and continued development of the ORS. Other efforts include Drogue Stabilization analysis, trade studies and ORS Software Qualification.					
FY 2024 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3409 / *Advanced Aerial Refueling Store*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2024 funding will continue the DCU development of the existing Aerial Refueling Stores and begins Hydraulic System Improvements Development. Funding provided for the development includes surrogate flight testing of the DCU and the continuation of software and power supply development and prototyping. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease of $4.489M from FY 2023 to FY 2024 due finalizing of the DCU development and transition into production/qualification efforts.					
Accomplishments/Planned Programs Subtotals	4.608	6.705	2.216	0.000	2.216

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• APN/0720: *War Consumables*	42.431	40.316	44.632	-	44.632	48.109	52.662	53.814	55.038	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Advanced Aerial Refueling Store (AARS) development program will mature and integrate modifications to improve the existing Aerial Refueling Store (ARS). The Advanced Aerial Refueling Store (AARS) program will develop, prototype and test the next generation Aerial Refueling Store (ARS) utilizing a hybrid program structure to capitalize on existing technologies that can be incorporated into the existing ARS to improve reliability and readiness while also increasing safety during refueling. The AARS technologies will be fielded as a series of individual modifications to the ARS.

The ARS improvement program will center on the Digital Controller Upgrade (DCU). The DCU utilizes government owned software and hardware to command and control the refueling store. The remainder of the AARS upgrades will be built around this government owned DCU. Based on current technology assessments, the program anticipates incorporating an Optical Reference System into the DCU to improve performance and reduce risk during refueling. Additional technologies that will be evaluated include drogue stabilization sensors, positioning, improved health and diagnostics and real time receiver situational awareness for unmanned mission operators.

The program will use regular technical interchanges to coordinate with F/A-18 and MQ-25 platforms to maximize effectiveness of the technology upgrades across both manned and unmanned environments.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3409 / *Advanced Aerial Refueling Store*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Controller Upgrade Dev & Int	SS/CPFF	CTSi : Lakehurst, NJ	0.000	3.000	Jul 2022	2.455	Apr 2023	0.458	Apr 2024	-		0.458	0.000	5.913	5.913
Government Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.608	Apr 2022	1.500	Jan 2023	0.300	Nov 2023	-		0.300	0.000	2.408	-
Hydraulic System Improvements Developmen	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.458	Nov 2023	-		0.458	0.000	0.458	-
Drogue Stabilization Development	SS/CPFF	AMA : Lakehurst, NJ	0.000	1.000	Jun 2022	1.750	Apr 2023	0.000		-		0.000	0.000	2.750	2.750
Flight Test OTA	TBD	TBD : Patuxent River, MD	0.000	0.000		0.000		0.800	Feb 2024	-		0.800	0.000	0.800	-
		Subtotal	0.000	4.608		5.705		2.016		-		2.016	0.000	12.329	N/A

Remarks

Hydraulic system improvement was delayed to FY 2024 due to the higher priority efforts of the DCU upgrades requiring the FY 2023 funds.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD Pax : Patuxent River, MD	0.000	0.000		1.000	Apr 2023	0.200	Nov 2023	-		0.200	0.000	1.200	-
		Subtotal	0.000	0.000		1.000		0.200		-		0.200	0.000	1.200	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	0.000	4.608		6.705		2.216		-		2.216	0.000	13.529	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3409 / *Advanced Aerial Refueling Store*

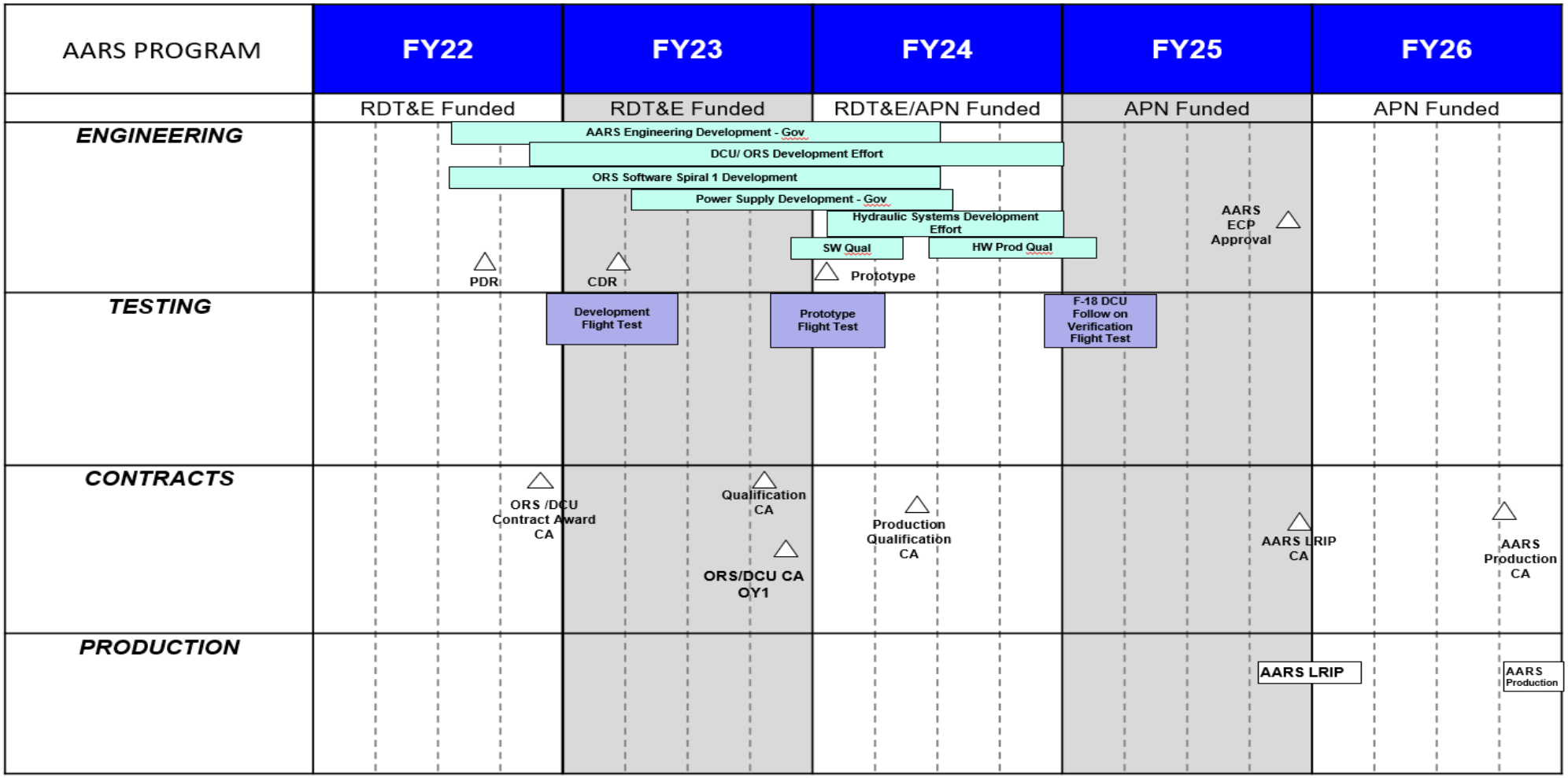

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3409 / *Advanced Aerial Refueling Store*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3409				
AARS Development: AARS Engineering Development - Gov	3	2022	3	2024
AARS Development: DCU/ORS Development Effort	4	2022	4	2024
AARS Development: ORS Software Spiral 1 Development	3	2022	3	2024
AARS Development: Power Supply Development - Gov	2	2023	3	2024
AARS Development: Hydraulic System Upgrade Development Effort	1	2024	4	2024
AARS Development: Software Qualification	4	2023	2	2024
AARS Development: Hardware Production Qualification	2	2024	1	2025
AARS Development: PDR	3	2022	3	2022
AARS Development: CDR	1	2023	1	2023
AARS Development: Prototype	1	2024	1	2024
AARS Development: AARS ECP Approval	4	2025	4	2025
Testing: Development Flight Test	4	2022	2	2023
Testing: Prototype Flight Test Validation	4	2023	2	2024
Testing: F-18 DCU Follow Verification Flight Test	4	2024	2	2025
Contracts: DCU/ORS Contract Award	4	2022	4	2022
Contracts: DCU/ORS Contract Award OY1	4	2023	4	2023
Contracts: Qualification Contract Award	4	2023	4	2023
Contracts: Production Qualification Contract Award	2	2024	2	2024
Contracts: AARS LRIP CA	4	2025	4	2025
Contracts: AARS Production CA	4	2026	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 3411 / *CAD/PAD Digital Twin Modeling*	

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
3411: *CAD/PAD Digital Twin Modeling*	0.769	0.744	0.351	0.828	-	0.828	0.553	0.439	0.446	0.455	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Cartridge Actuated Devices/ Propellant Actuated Devices (CAD/PAD) Digital Twin Modeling will develop and validate models and algorithms for the Department of the Navy (DoN). Digital Twin is a software model that predicts service life of a components' energetic material. This will be used to move towards a Condition Based Maintenance Model vice restrictive service life. The development will be phased over three efforts, specific to Navy AirCrew Common Ejection Seats (NACES). These models will be used as a starting point for a condition based service life for CAD/PAD. A condition based service life will result in long term cost savings for the DoN by enabling CAD/PAD to be installed for full useful service life. These models will also be used to support initial service life decisions, service life extension decisions, and address obsolescence.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: CAD/PAD Digital Twin Modeling	0.744	0.351	0.828	0.000	0.828
Articles:	-	-	-	-	-
FY 2023 Plans: Continue to develop software and integrating digital twin model into additional Navy or tri-service aviation platforms.					
FY 2024 Base Plans: Software security compliance tests will be conducted to ensure developed software meets software security and DOD cloud cyber security requirements. The tests will be conducted in FY 2024 during the software integration phase.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase in FY 2024 due to the start of software security compliance testing.					
Accomplishments/Planned Programs Subtotals	0.744	0.351	0.828	0.000	0.828

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3411 / *CAD/PAD Digital Twin Modeling*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• PANMC/0180: *CARTRIDGE ACTUATED DEVICES/ PROPELLANT ACT DEVICES*	68.387	71.391	72.426	-	72.426	73.969	75.354	76.947	79.222	Continuing	Continuing

Remarks

The software development for CAD/PAD products to support inventory objectives by transitioning to condition based maintenance. Recent investigations into life cycle cost savings, safety mitigation and reliability of products indicate that a substantial costs savings could be realized, address obsolescence, as well as improve readiness.

D. Acquisition Strategy

Culmen International, LLC has a proven methodology to develop computer models (digital twin) relevant to the thermal loading CAD/PAD items are subjected to. A contract will be awarded to Culmen International, LLC to develop a digital twin using their proprietary software, Tru Navigator. The Tru Navigator software will use as its input, key areas of degradation to CAD/PAD items (temperature, humidity, shock, vibration and thermal cycling) and its output will be the cumulative degradation to the CAD/PAD item. Additional technologies and associated vendors will also be evaluated as necessary.

All other efforts; procurement of CAD/PAD test items, test and evaluation, and model validation will be sourced using competitive contracting strategies.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3411 / *CAD/PAD Digital Twin Modeling*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	SS/CPIF	Culmen International : Alexandria, VA	0.469	0.659	Jul 2022	0.267	Jun 2023	0.742	Jan 2024	-		0.742	Continuing	Continuing	Continuing
		Subtotal	0.469	0.659		0.267		0.742		-		0.742	Continuing	Continuing	N/A

Remarks

FY 2024 Phase IV contract supports compliance test efforts to support the software integration phase of the Digital Twin Modeling.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Support	WR	NSWC : Indian Head	0.300	0.085	Mar 2022	0.084	Feb 2023	0.086	Dec 2023	-		0.086	Continuing	Continuing	Continuing
		Subtotal	0.300	0.085		0.084		0.086		-		0.086	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	0.769	0.744		0.351		0.828		-		0.828	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3411 / *CAD/PAD Digital Twin Modeling*

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CADPAD PROGRAM SCHEDULE PB24

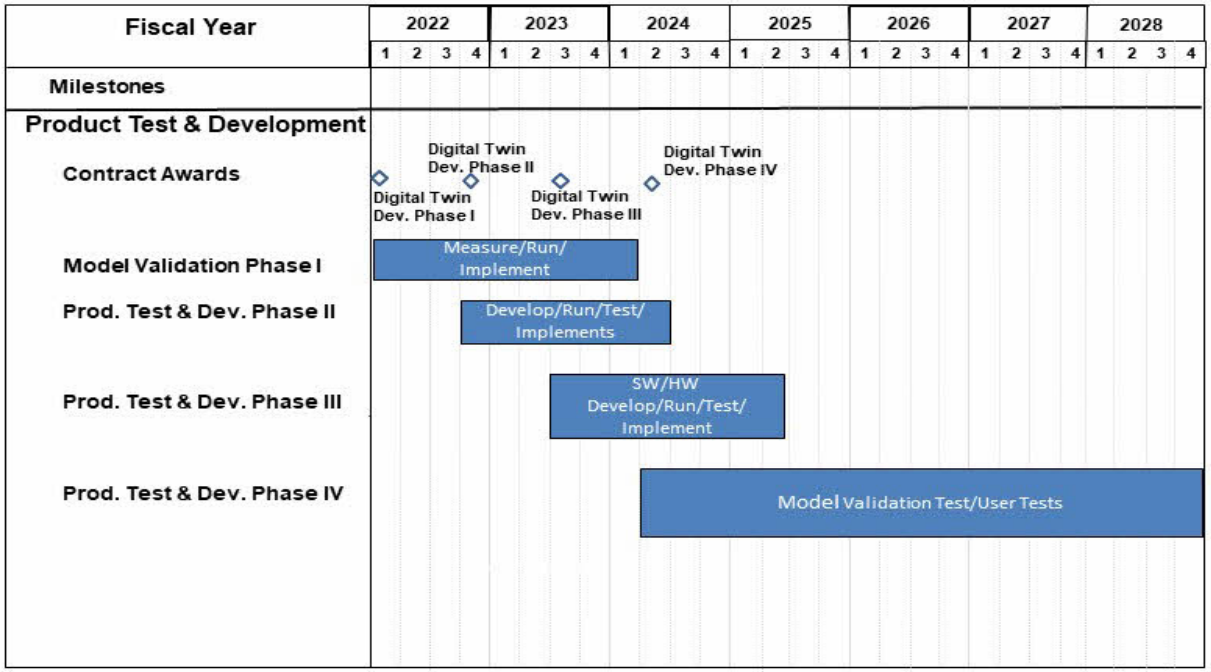

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3411 / *CAD/PAD Digital Twin Modeling*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
CAD/PAD Digital Twin Modeling				
Product Development: Contract Awards: FY 2022 Culmen International Contract Award (Phase I)	1	2022	1	2022
Product Development: Contract Awards: FY 2022 Culmen International Contract Award (Phase II)	4	2022	4	2022
Product Development: Contract Awards: FY 2023 Culmen International Contract Award (Phase III)	3	2023	3	2023
Product Development: Contract Awards: FY 2024 Culmen International Contract Award (Phase IV)	2	2024	2	2024
Product Development: Model Validation Phase I: Model Validation Phase I	1	2022	1	2024
Product Development: Product Test and Development Phase II: Product Test and Development Phase II	4	2022	2	2024
Product Development: Product Test and Development Phase III: Product Test and Development Phase III	3	2023	2	2025
Product Development: Product Test and Development Phase IV: Product Test and Development Phase IV	2	2024	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 3467 / *Sea Launched Cruise Missile Nuclear*	

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
3467: *Sea Launched Cruise Missile Nuclear*	0.000	5.033	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.033
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project will design, develop, produce and deploy a Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N). SLCM-N is scoped to deliver an integrated flight system and to continue to advance SLCM-N capabilities to fully address requirements identified in the 2018 Nuclear Posture Review, SLCM-N Initial Capabilities Document, and examined in the Analysis of Alternatives to mitigate a lack of a sea based tactical nuclear based system.

The major activities in the SLCM-N program include 1) Flight System (FS); 2) Weapon System Command and Control (WSC2); 3) Infrastructure [e.g. Launch Vessel (LV) and Launch Control Centers (LCC)]; 4) Weapon System Integration. Flight System is an integrated system which includes the following major subcomponents: propulsion, guidance, and warhead systems. WSC2 encompasses all weapon system Command and Control (C2) components and interfaces, associated shipboard hardware, shipboard fire control equipment and associated software directly related to the sustainment, survivability, monitoring and launch of the flight system. Infrastructure includes modernization of launch vessels, real property and structures, and associated ground mechanical systems. The SLCM-N program will include development of applicable support equipment, data, flight test hardware and infrastructure, and training material.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: SLCM-N	5.033	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2023 Plans: N/A					
FY 2024 Base Plans: N/A					
FY 2024 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	5.033	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3467 / *Sea Launched Cruise Missile Nuclear*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

The SLCM-N program will deliver a weapon system capability that meets Navy requirements. For the pre-Milestone A and Technology Maturation/Risk Reduction (TMRR) phases of this strategy, contracts will be competitively awarded. The TMRR phase will include a System Requirements Review (SRR), a System Design Review (SDR) and will culminate in a system Preliminary Design Review (PDR). As appropriate, the contract will include risk reduction prototyping on key technologies and the requirement to bring forward multiple vendor designs for key government designated components/sub-components to PDR or beyond. After MS B approval, Engineering, Manufacturing and Development (EMD) contract will be competitively awarded.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3467 / *Sea Launched Cruise Missile Nuclear*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCLM-N	TBD	TBD : TBD	0.000	5.033	May 2022	0.000		0.000		-		0.000	0.000	5.033	-
		Subtotal	0.000	5.033		0.000		0.000		-		0.000	0.000	5.033	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	0.000	5.033		0.000		0.000		-		0.000	0.000	5.033	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3467 / *Sea Launched Cruise Missile Nuclear*

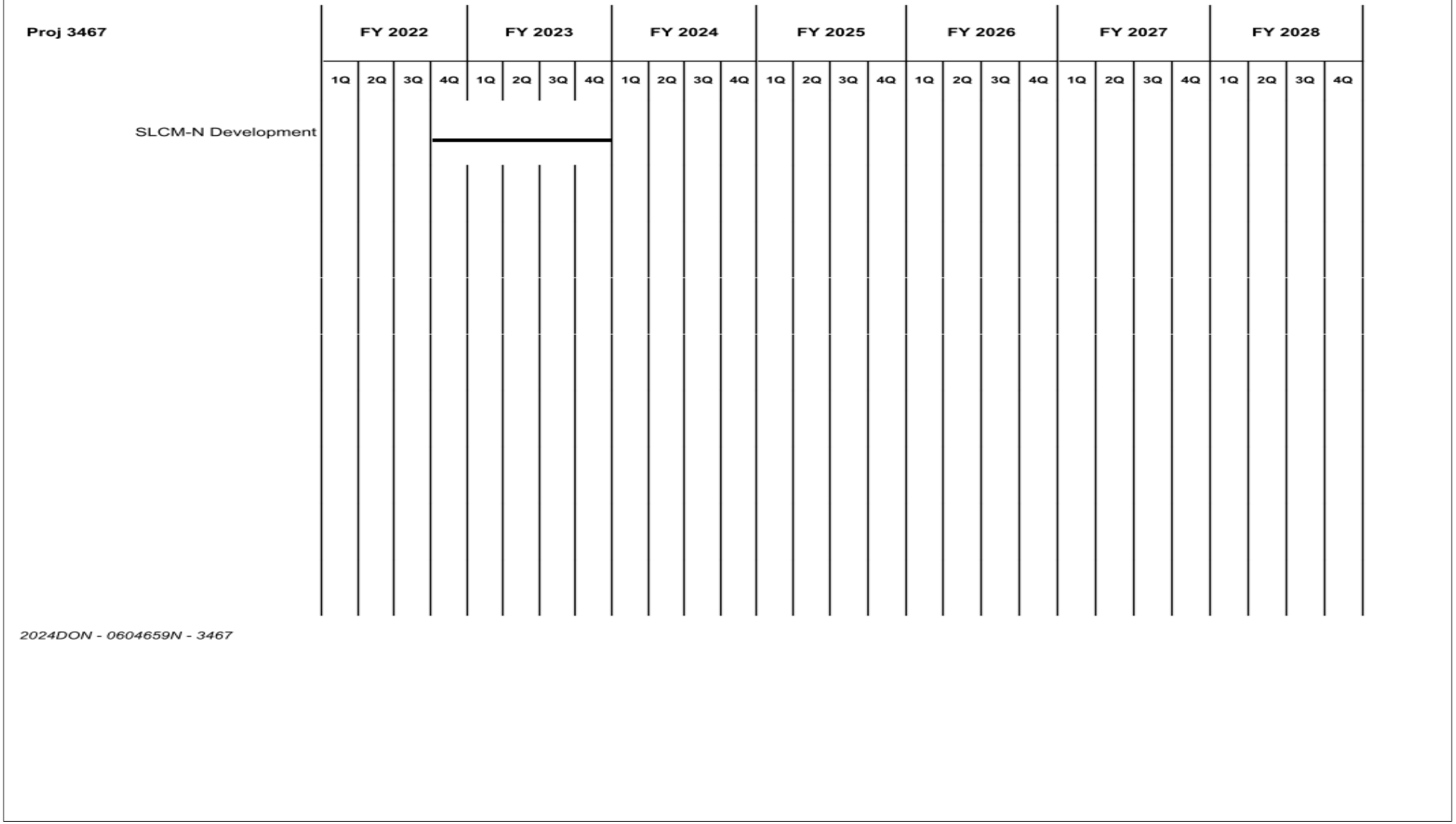


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 3467 / *Sea Launched Cruise Missile Nuclear*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3467				
SLCM-N Development: SLCM-N Continuous Development	4	2022	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 9999 / *Congressional Adds*	

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	5.792	25.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.792
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

C762 - NEUTRON RADIOGRAPHY TECHNOLOGIES FOR ENERGETIC DEVICES

Neutron radiography (N-ray) is a critical nondestructive inspection technique used to complement X-ray. N-ray and X-ray are used to detect defects and proper assembly of a variety of energetics, including Cartridge and Propellant Actuated Devices (CAD/PADs). The US Navy intends to continue to employ neutron radiographic inspection to support energetics programs for the foreseeable future. Historically, nuclear reactors have been the only sources to perform high quality, high throughput neutron radiography. The energetics supply chain has been heavily reliant on a single commercial nuclear reactor that has been operating since the 1950s with closure imminent This congressional add allows research and development to provide a site survey and preparatory improvement of facilities to support a high energy ion accelerator capability.

*PHASE I of N-Ray Congressional Add is located under PE: 0605518N CONVENTIONAL PROMPT STRIKE (CPS).

C880: SLCM-N
This project will conduct system development and demonstration of nuclear-capable sea-launched cruise missile.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023
Congressional Add: Neutron radiography technologies for energetic devices	5.792	0.000
FY 2022 Accomplishments: Congressional Add for Neutron radiographic inspection of cartridge and propellant. Funding was realigned to NAVAIR as they were the intended recipient of the Congressional Add.		
FY 2023 Plans: N/A		
Congressional Add: SLCM-N	0.000	25.000
FY 2022 Accomplishments: N/A		
FY 2023 Plans: Congressional add for Nuclear-Capable Sea-Launched Cruise Missile (SLCM-N). Funds will be used to refine SLCM-N parameters to enable any future acquisition decision. Conduct SLCM-N technology development and conduct SLCM-N systems engineering and technical evaluation efforts.		
Congressional Adds Subtotals	5.792	25.000

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 9999 / *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

CAD/PAD JPO and NSWC IHD are performing site and facility assessments, developing requirements, and performing a safety analyses for an accelerator-based neutron radiography capability to be located at NSWC IHD other partner location.

In parallel to the government work above, a contract is planned to award for engineering support to perform modeling and safety analyses to ensure the system is safe to operate in the Navy facility, as well as assist the Navy with any regulatory submittals required to own and operate the system. System component hardware procurement will be phased in once requirements are defined.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase II Product Dev	WR	NSWC : Indian Head	0.000	3.177	Jul 2022	0.000		0.000		-		0.000	0.000	3.177	-
Phase II Product Dev	TBD	Pheonix, LLC : Wisconsin	0.000	2.600	Oct 2022	0.000		0.000		-		0.000	0.000	2.600	2.600
		Subtotal	0.000	5.777		0.000		0.000		-		0.000	0.000	5.777	N/A

Remarks

FY 2022 Congressional Add for Neutron radiographic inspection of cartridge and propellant.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase II NAWCWD Support	WR	NAWCWD : CHINA LAKE	0.000	0.015	Aug 2022	0.000		0.000		-		0.000	0.000	0.015	-
		Subtotal	0.000	0.015		0.000		0.000		-		0.000	0.000	0.015	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	JHU/APL : BALTIMORE, MD	0.000	0.000		2.500	Oct 2023	0.000		-		0.000	0.000	2.500	-
Developmental Test & Evaluation (DT&E)	C/CPFF	TBD1 : TBD	0.000	0.000		8.000	Oct 2023	0.000		-		0.000	0.000	8.000	-
Developmental Test & Evaluation (DT&E)	C/CPFF	TBD2 : TBD	0.000	0.000		8.000	Oct 2023	0.000		-		0.000	0.000	8.000	-
Developmental Test & Evaluation (DT&E)	C/CPFF	TBD3 : TBD	0.000	0.000		4.000	Oct 2023	0.000		-		0.000	0.000	4.000	-
Developmental Test & Evaluation (DT&E)	C/CPFF	TBD4 : TBD	0.000	0.000		2.500	Oct 2023	0.000		-		0.000	0.000	2.500	-
		Subtotal	0.000	0.000		25.000		0.000		-		0.000	0.000	25.000	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604659N / *Precision Strike Weapons Development Program*	Project (Number/Name) 9999 / *Congressional Adds*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
FY 2023 Congressional Add for Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N)															

	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	0.000	5.792		25.000		0.000		-		0.000	0.000	30.792	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 9999 / *Congressional Adds*

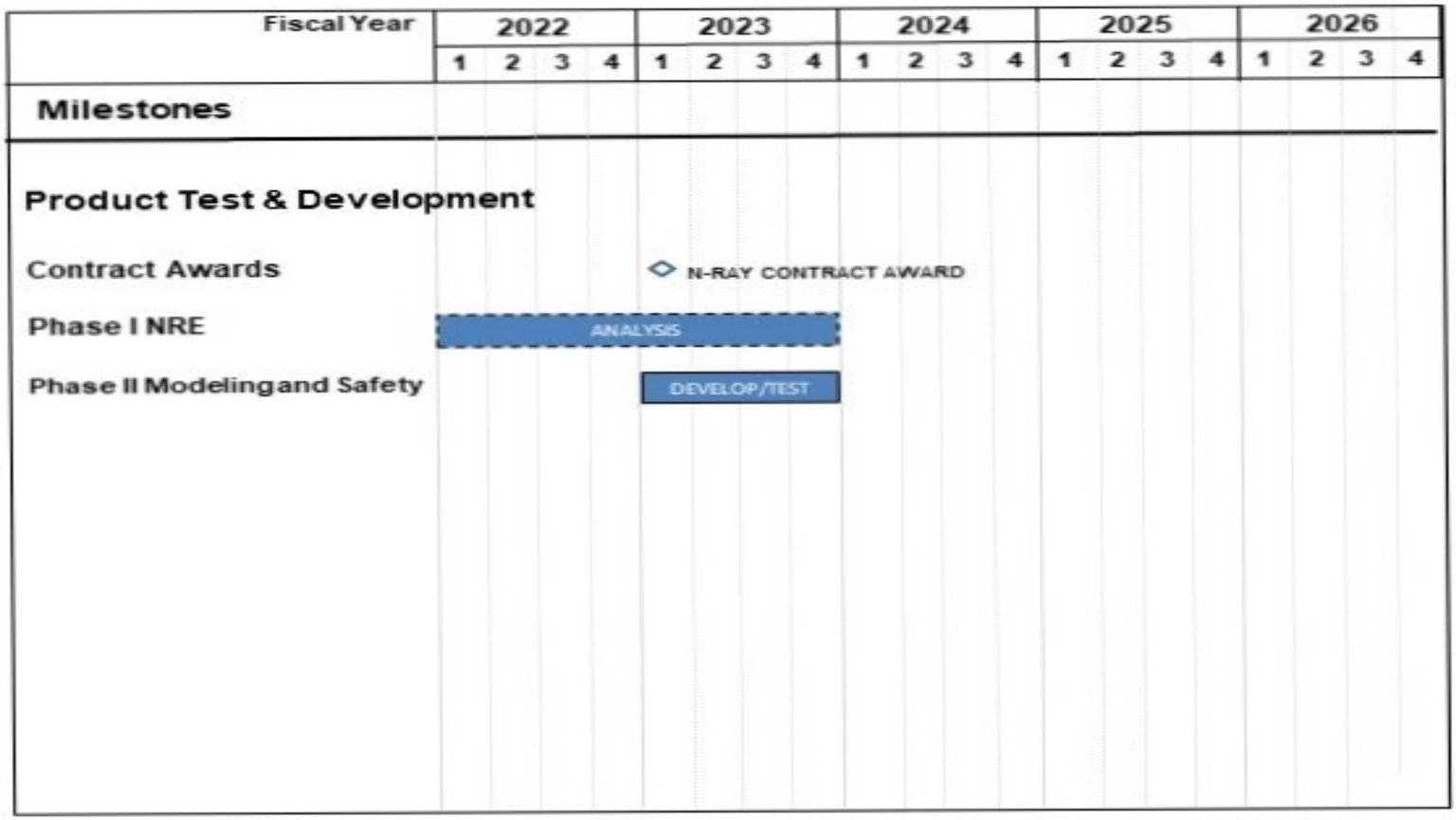
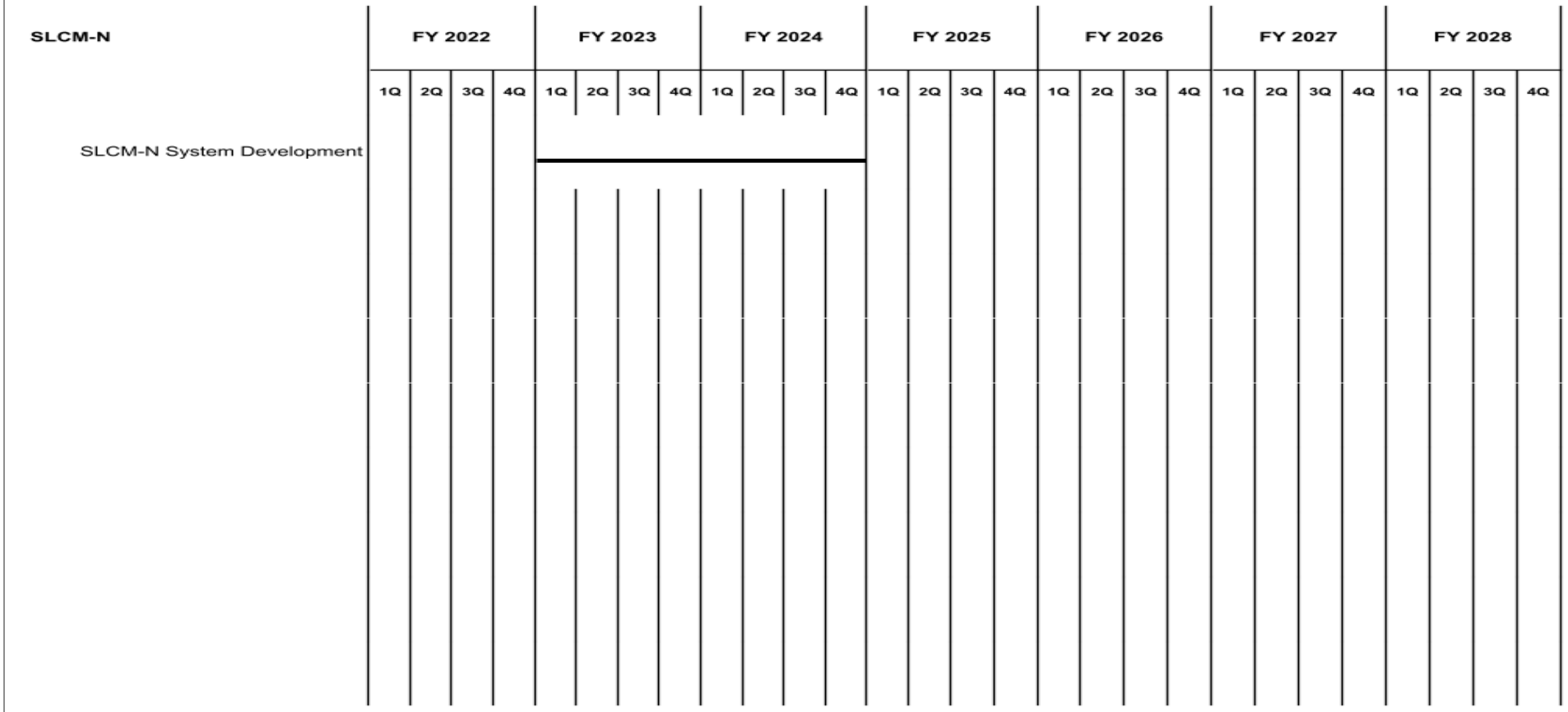


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 9999 / *Congressional Adds*



2024PB - 0604659N - 9999

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604659N / *Precision Strike Weapons Development Program*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
CAD/PAD N-RAYPage/Group/Row				
Product Development: Contract Awards: PHEONIX, LLC CONTRACT	1	2023	1	2023
Product Development: PHASE I NRE: Analysis	1	2022	4	2023
Product Development: PHASE II MODEL SAFETY: PHASE II MODEL SAFETY	1	2023	4	2023
SLCM-N				
SLCM-N System Development: SLCM-N System Development	1	2023	4	2024