Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
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 0605514M *I GROUND BASED ANTI-SHIP MISSILE*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	0.000	28.194	102.716	43.090	-	43.090	17.797	17.371	3.999	3.856	Continuing	Continuing
6637: *Ground Based Anti-Ship Missile*	0.000	28.194	102.716	43.090	-	43.090	17.797	17.371	3.999	3.856	Continuing	Continuing

A. Mission Description and Budget Item Justification

As the Marine Corps' first Ground Based Anti-Ship Missile (GBASM) capability, the Navy/Marine Expeditionary Ship Interdiction System (NMESIS) is a priority central to the Marine Corps' contribution to the Naval Expeditionary Force's (NEF) anti-surface warfare campaign. This is a critical Service modernization capability requirement focused specifically on countering the Nation's pacing threat. Ground based launchers add a new type of threat against a peer adversary, stress different surveillance and offensive systems, are hard to detect and track in a cluttered environment, and add a significant level of persistence and depth to existing anti-ship capabilities. NMESIS will be employed by Medium-range Missile (MMSL) batteries serving as part of Marine Littoral Regiments (MLR) conducting Expeditionary Advanced Base Operations (EABO) while persisting inside the adversary's weapons engagement zone (WEZ). When integrated into sensor and communication networks supporting a naval/maritime mission thread, and synchronized with employment of other missile systems, the Marine Corps' MMSL battery will serve as a component of the NEF "stand-in force" in support of the naval sea control effort.

NMESIS consists of two Naval Strike Missiles (NSM) and a launcher/weapon control system integrated on to a ground-based, teleoperated carrier (called ROGUE-Fires). It will provide a ground based anti-access/area denial, anti-ship capability. This program includes design, development, test and production of the NSM launcher, ROGUE-Fires carrier, Leader kit, Weapons Control System (WCS), and Command and Control (C2) connections to enable the transport and firing of NSMs. NMESIS makes extensive use of proven sub-systems, such as the Joint Light Tactical Vehicle (JLTV) chassis, the U.S. Navy's Naval Strike Missile and its WCS.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	29.678	102.716	0.000	-	0.000
Current President's Budget	28.194	102.716	43.090	-	43.090
Total Adjustments	-1.484	0.000	43.090	-	43.090
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.741	0.000			
• SBIR/STTR Transfer	-2.225	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	43.090	-	43.090

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
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 0605514M *I GROUND BASED ANTI-SHIP MISSILE*

Change Summary Explanation

The decrease of $59.626M from FY 2022 to FY 2023 reflects the completion of the PRMs and test missiles procured in FY 2022. FY 2023 focuses on testing to include New Equipment Training (NET), Electromagnetic Environmental Effects (E3), and electromagnetic signature (SIG) testing/characterization, and Marine Corps Operational Test and Evaluation Activity (MCOTEA) IOT&E of NMESIS to include ballistic and guided flight tests in Q3 FY 2023.

The FY 2023 funding request was adjusted by $1.809M to account for the availability of prior year execution balances.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	Project (Number/Name) 6637 / *Ground Based Anti-Ship Missile*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
6637: *Ground Based Anti-Ship Missile*	0.000	28.194	102.716	43.090	-	43.090	17.797	17.371	3.999	3.856	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As the Marine Corps' first Ground Based Anti-Ship Missile (GBASM) capability, the Navy/Marine Expeditionary Ship Interdiction System (NMESIS) is a force design priority central to the Marine Corps' contribution to the Naval Expeditionary Force's (NEF) surface warfare campaign. This is a critical Service modernization capability requirement focused specifically on countering the Nation's pacing threat. Ground-based launchers add a new type of threat against a peer adversary, stress different surveillance and offensive systems, are hard to detect and track in a cluttered environment, and add a significant level of persistence and depth to existing anti-ship capabilities. NMESIS will be employed by Medium-range Missile (MMSL) batteries within the Marine Divisions and will be especially suited for operations with Marine Littoral Regiments and Marine Expeditionary Units and when integrated into sensor and communication networks supporting a naval/maritime mission thread, and synchronized with employment of other missile systems, the NMESIS-equipped MMSL batteries will serve as a component of the NEF "stand-in force" providing lethal, precision anti-ship fires supporting sea denial and sea control operations.

NMESIS consists of two Naval Strike Missiles (NSM) and a launcher/weapon control system integrated on to a ground-based, teleoperated carrier (called ROGUE-Fires). It will provide a ground based anti-access/area denial, anti-ship capability. This program includes design, development, test and production of the NSM launcher, Weapons Control System (WCS), ROGUE-Fires Carrier, Leader Kit, and Command and Control (C2) connections to enable the transport and firing of NSMs. NMESIS makes extensive use of proven sub-systems, such as the Joint Light Tactical Vehicle (JLTV) chassis, the U.S. Navy's Naval Strike Missile and its WCS.

FY 2022 completed an update of the Weapons Control System, initiated development of platoon level mission planning software, and conducted an Operational Assessment. Due to the lead-times, FY 2022 also purchased the Production Representative Models (PRMs) and missile test assets to support FY 2023 test events. FY 2023 test events include New Equipment Training (NET), Electromagnetic Environmental Effects (E3), and electromagnetic signature (SIG) testing/characterization, and Marine Corps Operational Test and Evaluation Activity (MCOTEA) IOT&E of NMESIS to include ballistic and guided flight tests in Q3 FY 2023.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Navy Marine Expeditionary Ship Interdiction System (NMESIS)	28.194	102.716	43.090	0.000	43.090
Articles:	-	-	-	-	-
FY 2022 Plans: Integrate an existing Anti-Ship Missile (ASM) capability onto Marine Corps ground platforms. Activities include: - Complete update of WCS and TCA - Complete Critical Design Review (CDR)					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	**Project (Number/Name)** 6637 / *Ground Based Anti-Ship Missile*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Initiate development of platoon level mission planning software - Build NMESIS Production Representative Models (PRM) for testing (8 for IOT&E, 2 for Electromagnetic Environment Effects/Signal (E3/SIG) testing) - Purchase test missiles for FY 2022 Operational Assessment (OA) (8 EM-B ballistic test missiles, 2 EM-D dummy missiles, 22 EM-TR simulator missiles) and FY 2023 IOT&E (2 EM-T telemetry missiles) - Conduct Marine Corps Operational Test & Evaluation Activity (MCOTEA) OA of NMESIS to include ballistic test events - Conduct transportability tests for CH-53, C-130, L-class ships, and ship to shore connectors - Conduct fleet and user evaluations with NMESIS to refine tactics, techniques, and procedures (TTPs) with Marine operators ***FY 2023 Base Plans:*** Integrate an existing Anti-Ship Missile (ASM) capability onto Marine Corps ground platforms. Activities include: - Complete development of platoon level mission planning software - Continue fleet and user evaluations to refine initial doctrine and develop New Equipment Training products, increasing capacity with additional assets as they are delivered. - Purchase ballistic test missiles (QTY 6) to support FY 2023 IOT&E - Conduct Electromagnetic Environmental Effects (E3) testing - Conduct electromagnetic signature (SIG) testing/characterization - Conduct New Equipment Training (NET) for IOT&E with Production Representative Models (PRM) - Conduct Marine Corps Operational Test and Evaluation Activity (MCOTEA) IOT&E of NMESIS to include ballistic and guided flight tests. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease of $59.626M from FY 2022 to FY 2023 reflects the completion of the PRMs and test missiles procured in FY 2022. FY 2023 focuses on testing to include New Equipment Training (NET), Electromagnetic Environmental Effects (E3), and electromagnetic signature (SIG) testing/characterization, and Marine Corps Operational Test and Evaluation Activity (MCOTEA) IOT&E of NMESIS to include ballistic and guided flight tests in Q3 FY 2023.					
Accomplishments/Planned Programs Subtotals	28.194	102.716	43.090	0.000	43.090

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	**Project (Number/Name)** 6637 / *Ground Based Anti-Ship Missile*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 2212: *Artillery Weapons System*	49.687	221.347	143.808	-	143.808	285.025	279.566	322.426	227.069	61.792	2,499.719
• 2292: *NAVAL STRIKE MISSILE (NSM)*	0.000	0.000	174.369	-	174.369	157.690	160.722	100.073	159.206	Continuing	Continuing

Remarks

BLI 2212 Artillery Weapons System includes funding for HIMARS, GBASM, and LRF.

D. Acquisition Strategy

The GBASM concept started as an effort to conduct a live-fire, guided flight demonstration of ground based anti-ship capability in order to inform future requirements. The program entered into Milestone B in 4th quarter 2021 and was designated ACAT III with a tailored MCA program with a Milestone C planned for 2Q FY 2023.

The NMESIS program is leveraging a prototype development effort to integrate the existing Naval Strike Missile (NSM), currently being procured by the U.S. Navy as part of their Over-the-Horizon Missile Launching System (OTH-MLS), onto a tele-operated Joint Light Tactical Vehicle (JLTV) based launcher called the Remotely Operated Ground Unit for Expeditionary Fires (ROGUE-Fires), and develop/integrate the C2 and mobility control components onto a separate manned command vehicle.

Production contracts awarded in FY 2022 for the baseline configuration approved at the Critical Design Review (CDR). These contracts will cover procurement of systems for Initial Operational Test & Evaluation (IOT&E), Low Rate Initial Production, Full Rate Production, Contractor Logistics Support and spares. There will be two Marine Corps production contracts: Remotely-operated carrier (ROGUE-Fires); Launcher and fire control system. The Missile procurement will be accomplished via a Navy contract executed through the Navy Over-the-Horizon (OTH) Weapons Systems program office. The Other Transaction Authority (OTAs) agreements used to develop the initial systems will continue to be used to support program office testing through FY 2023 and may be used for future capability development. Developmental and operational system testing will be conducted in coordination with the Marine Corps Operational Test and Evaluation Activity. Additionally, missile testing will be coordinated with PM OTH-WS as part of their operational testing.

Initial sustainment strategy reflects Contractor Logistics Support (CLS). Commonality with JLTV and OTH-WS components will support accelerated transition to primary organic logistics support, augmented where necessary by CLS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	**Project (Number/Name)** 6637 / *Ground Based Anti-Ship Missile*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NSM Launcher and WCS Development	C/CPFF	Raytheon Company : Tucson, AZ	0.000	18.607	Nov 2020	16.744	Nov 2021	6.055	Nov 2022	-		6.055	0.000	41.406	-
PRM - Launcher	SS/FFP	Raytheon Company : Tucson, AZ	0.000	0.000		18.493	Nov 2021	0.000		-		0.000	0.000	18.493	-
PRM - WCS	SS/FFP	Raytheon Company : Tucson, AZ	0.000	0.000		3.947	Nov 2021	0.000		-		0.000	0.000	3.947	-
Platoon Level Planning	C/CPFF	Raytheon Company : Tucson, AZ	0.000	0.000		12.096	Nov 2021	5.912	Nov 2022	-		5.912	0.000	18.008	-
Rogue-Fires Carrier Development	SS/FFP	Oshkosh : Oshkosh, WI	0.000	2.041	Nov 2020	5.481	Dec 2021	3.779	Nov 2022	-		3.779	0.000	11.301	-
PRM - Carrier	SS/FFP	Oshkosh : Oshkosh, WI	0.000	0.000		10.749	Feb 2022	0.000		-		0.000	0.000	10.749	-
PRM - Leader Kit	C/FFP	Oshkosh : Oshkosh, WI	0.000	0.000		2.642	Feb 2022	0.000		-		0.000	0.000	2.642	-
PRM - Re-Supply	TBD	TBD : TBD	0.000	0.000		1.012	Jan 2022	0.000		-		0.000	0.000	1.012	-
Tactical Comm Adapter	WR	NSWC-DD : Dahlgren, VA	0.000	0.650	Nov 2020	0.857	Nov 2021	0.000		-		0.000	0.000	1.507	-
		Subtotal	0.000	21.298		72.021		15.746		-		15.746	0.000	109.065	N/A

Remarks

The decrease of $56.275M from FY 2022 to FY 2023 is driven by the FY 2022 purchases of PRMs and test missiles as well as a decrease in developmental efforts to include platoon level planning software.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Safety	WR	MCSC : Stafford, VA	0.000	0.207	Oct 2020	0.207	Dec 2021	0.213	Nov 2022	-		0.213	0.427	1.054	-
Cybersecurity/IA	WR	NSWC : Indian Head, MD	0.000	0.035	Nov 2020	0.148	Dec 2021	0.153	Nov 2022	-		0.153	0.306	0.642	-
Management and Prof. Services	Various	MCSC : various	0.000	0.247	Nov 2020	0.126	Jan 2022	0.129	Nov 2022	-		0.129	0.356	0.858	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	**Project (Number/Name)** 6637 / *Ground Based Anti-Ship Missile*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	0.489		0.481		0.495		-		0.495	1.089	2.554	N/A

Remarks

FY 2022 to FY 2023 increase $0.014M is driven by increased support required during environmental, ballistic, and IOT&E test events.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NSM Missile Test Articles	C/FFP	Raytheon : Tuscon, AZ	0.000	0.463	Nov 2020	15.680	Dec 2021	3.652	Nov 2022	-		3.652	0.000	19.795	-
Launcher Ctr Test & Engineering Support	C/CPFF	Raytheon : Tucson, AZ	0.000	1.430	Nov 2020	3.940	Dec 2021	6.328	Nov 2022	-		6.328	0.000	11.698	-
Government Eng Support	MIPR	NAWC WD : China Lake, CA	0.000	1.262	Oct 2020	1.334	Dec 2021	1.523	Nov 2022	-		1.523	Continuing	Continuing	Continuing
Carrier Ctr Test & Engineering Support	C/CPFF	Oshkosh : Oshkosh, WI	0.000	0.000		2.656	Dec 2021	2.220	Nov 2022	-		2.220	0.000	4.876	-
Government Eng Support	MIPR	NSWC-DD : Dahlgren, VA	0.000	0.136	Dec 2020	1.327	Dec 2021	1.928	Nov 2022	-		1.928	Continuing	Continuing	Continuing
Government Test Support	Various	various : various	0.000	1.644	Oct 2020	1.461	Oct 2021	2.723	Nov 2022	-		2.723	0.000	5.828	-
Transportability Test	Various	various : various	0.000	1.372	Nov 2021	0.512	Nov 2021	0.000		-		0.000	0.000	1.884	-
Operational Tests	Various	MCOTEA : Camp Pendleton, CA	0.000	0.000		3.157	Dec 2021	8.329	Nov 2022	-		8.329	0.000	11.486	-
		Subtotal	0.000	6.307		30.067		26.703		-		26.703	Continuing	Continuing	N/A

Remarks

FY 2022 to FY 2023 decrease $3.364M due to decrease of missile test articles purchased in FY 2022 for early FY 2023 test events. Launcher, Carrier, and Government Test increases from FY 2022 to FY 2023 are due to additional support required for IOT&E. Operational Tests include OA in FY 2022 and IOT&E in FY 2023.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	**Project (Number/Name)** 6637 / *Ground Based Anti-Ship Missile*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBASM Travel	Various	Various : Various	0.000	0.100	Dec 2020	0.147	Dec 2021	0.146	Nov 2022	-		0.146	Continuing	Continuing	Continuing
		Subtotal	0.000	0.100		0.147		0.146		-		0.146	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	28.194		102.716		43.090		-		43.090	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	**Project (Number/Name)** 6637 / *Ground Based Anti-Ship Missile*

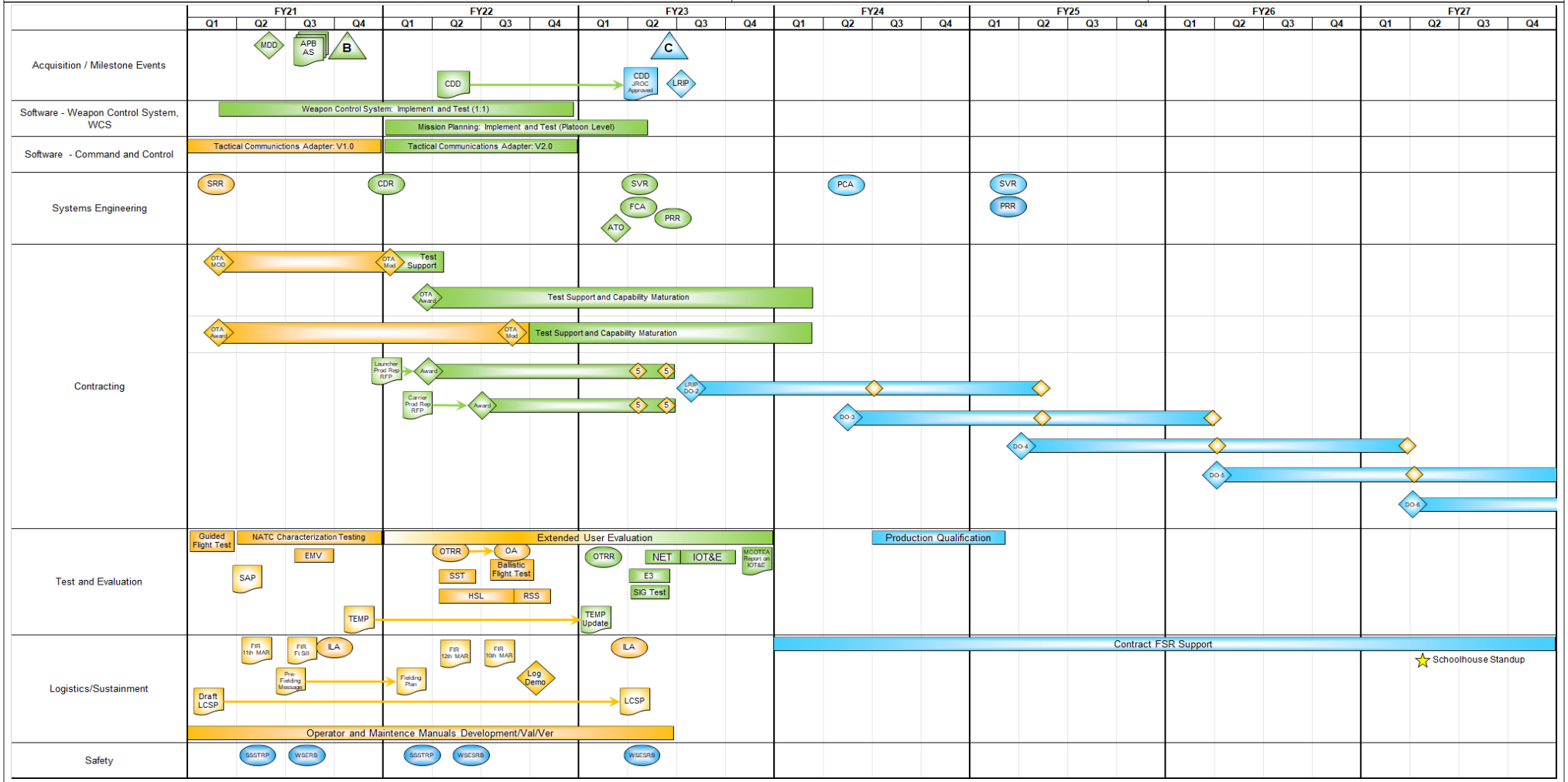

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0605514M / *GROUND BASED ANTI-SHIP MISSILE*	**Project (Number/Name)** 6637 / *Ground Based Anti-Ship Missile*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 6637				
Launcher PRM Contract Award	1	2022	1	2022
Carrier PRM Contract Award	2	2022	2	2022
Operational Assesment (OA)	3	2022	3	2022
Milestone C	2	2023	2	2023
NET/IOT&E	2	2023	4	2023