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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2021 Navy **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	23.100	0.000	51.997	189.603	-	189.603	203.265	206.773	101.691	103.730	Continuing	Continuing
1558: <i>Armored Reconnaissance Vehicle</i>	0.000	0.000	7.700	20.199	-	20.199	36.313	76.499	78.046	79.610	Continuing	Continuing
2614: <i>SMAW Follow-On</i>	23.100	0.000	0.000	0.500	-	0.500	0.500	0.500	2.000	2.040	Continuing	Continuing
6637: <i>Ground Based Anti-Ship Missile</i>	0.000	0.000	0.000	64.207	-	64.207	29.768	29.774	21.645	22.080	Continuing	Continuing
6638: <i>Long Range Fires</i>	0.000	0.000	0.000	75.000	-	75.000	100.000	100.000	0.000	0.000	0.000	275.000
7400: <i>Combat Capability Development Transition</i>	0.000	0.000	44.297	29.697	-	29.697	36.684	0.000	0.000	0.000	0.000	110.678

**Note**  
Starting in FY20, the Navy/Marine Expeditionary Ship Interdiction System (NMESIS) and Remotely Operated Ground Unit Expeditionary (ROGUE) effort was moved from BA07/PE 0206623M/Project 2928 to BA04/PE 0603635M/Project 7400 in order to align the program to a BA more appropriate for its current acquisition phase. These efforts are a continuation of the High Mobility Artillery Rocket Systems (HIMARS) Anti-Ship Capabilities initiated in FY19 within Project 2928, and are now referred to as Ground Based Anti-Ship Missile (GBASM).

Beginning in FY21, the GBASM effort is moved from Project 7400 to Project 6637 (Ground Based Anti-Ship Missile) within BA04/PE 0603635M.

**A. Mission Description and Budget Item Justification**  
This PE supports the demonstration and validation of Marine Corps Ground/Supporting Arms Systems for utilization in Marine Air-Ground Expeditionary Force amphibious operations. This program is funded under Demonstration & Validation because it develops and integrates hardware for experimental tests related to specific ground weapon systems.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2021 Navy **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	0.000	86.464	127.998	-	127.998
Current President's Budget	0.000	51.997	189.603	-	189.603
Total Adjustments	0.000	-34.467	61.605	-	61.605
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-34.467			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-63.657	-	-63.657
• Rate/Misc Adjustments	0.000	0.000	125.262	-	125.262

**Change Summary Explanation**

The net increase of \$137.606M from FY 2020 to FY 2021 is primarily due to the following program adjustments within the PE:

- 1) Long Range Unmanned Service Vessel (LRUSV) increase of \$28.697M from FY 2020 to FY 2021 supports the procurement of three improved LRUSV prototype vessels, launchers, and development and operational testing.
- 2) NMESIS/GBASM increase of \$20.910M from FY 2020 to FY 2021 supports mobility testing, user evaluations, and fire control system development. Increase also purchases missile qualification hardware, weapons sled and a ground launched guided flight test with the Navy against a simulated surface target.
- 3) Proj 6638 details held at a higher classification level.
- 4) Armored Reconnaissance Vehicle (ARV) increase of \$12.499M from FY20 to FY21 supports efforts to initiate ARV competitive prototype development and associated engineering support.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys				<b>Project (Number/Name)</b> 1558 / Armored Reconnaissance Vehicle			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
1558: Armored Reconnaissance Vehicle	0.000	0.000	7.700	20.199	-	20.199	36.313	76.499	78.046	79.610	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

Starting in FY20, the Armored Reconnaissance Vehicle (ARV) program moved from BA07/PE 0206623M/Project 1557 to BA04/PE 0603635M/Project 1558 in order to align the program to a BA more appropriate for its current acquisition phase.

**A. Mission Description and Budget Item Justification**

The ARV is designed to replace the Light Armored Vehicle (LAV) as the core of next generation advanced reconnaissance capability, with a purpose built, transformational vehicle system that balances competing capability demands to sense, shoot, move, communicate, and remain transportable as part of the future naval expeditionary force. It will be a modern combat vehicle system, capable of fighting for information in all weather conditions, using on board and remote autonomous systems (RAS) to conduct reconnaissance and counter reconnaissance in both the physical and information domains.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> Armored Reconnaissance Vehicle	0.000	7.700	20.199	0.000	20.199
<b>Articles:</b>	-	-	-	-	-
<b>FY 2020 Plans:</b>					
-Initiate cost sharing with the Office of Naval Research (ONR) for two science and technology (S&T) demonstrator platforms. These demonstrators will inform what technologies can be incorporated onto ARV and will be tested and evaluated with all knowledge and technology transferred to the program office upon completion.					
-Complete analysis of alternatives (AoA) and AoA report.					
-Complete request for information #2 (RFI) for competitive prototyping.					
-Complete Industry Market Research for EMD contract development.					
-Hold Industry Day for EMD contract development.					
<b>FY 2021 Base Plans:</b>					
-Release Competitive Prototype Request for Proposals					
-Initiate Test on Tech Demonstrator					
-Complete RFI #3 for Competitive Prototypes					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 1558 / <i>Armored Reconnaissance Vehicle</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
-Release RFP for competitive prototypes -Award Competitive prototype contracts -Release RFI #2 for EMD contract -Hold Industry Day for EMD contract  <b>FY 2021 OCO Plans:</b> N/A  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> The increase of \$12.499M from FY 2020 to FY 2021 leverages the Office of Naval Research's (ONR) technology demonstration efforts to initiate ARV competitive prototype development and associated engineering support. The increased funding will facilitate attracting a wider range of vendors, to include non-traditional defense contractors. This will help increase competition early on in the program lifecycle allowing the program to evaluate emerging technologies ready for incorporation into a system-level platform going in to the Engineering and Manufacturing Development (EMD) phase.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	7.700	20.199	0.000	20.199

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTEN/0603640M/2223: <i>Marine Corps Advanced Tech. Demo.</i>	19.650	13.050	1.500	-	1.500	0.000	0.000	0.000	0.000	0.000	41.287
• RDTEN/0206623M/1557: <i>ARV</i>	1.760	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.760

**Remarks**

**D. Acquisition Strategy**  
 The Armored Reconnaissance Vehicle (ARV) program will be focused on providing a base combat vehicle capable of meeting evolving threats via open systems architecture and sufficient size, weight, & power (SWAP) to accommodate future growth. Subsequent programs of record will expand the ARV capability to other mission roles and integrate capabilities that emerge from other programs to further develop and enhance Light Armored Reconnaissance (LAR) operations.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 1558 / <i>Armored Reconnaissance Vehicle</i>
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<b>Product Development (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
System Development & Demo.	C/FFP	ONR : Arlington, VA	0.000	0.000		4.700	Jan 2020	2.000	Jan 2021	-		2.000	Continuing	Continuing	Continuing
Prototype Manufacturing	C/FFP	TBD : TBD	0.000	0.000		0.000		13.000	Aug 2021	-		13.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.000		4.700		15.000		-		15.000	Continuing	Continuing	N/A

**Remarks**  
The Office of Naval Research (ONR) supports the next generation Armored Reconnaissance Vehicle (ARV) project utilizing the Future Naval Capability (FNC) process in order to develop and demonstrate viable and mature technologies befitting the program's envisioned operational employment. In FY21, \$2M is allocated to cost share in the development of technology demonstrators. \$13M initial prototype manufacturing investment provides for contractors to order raw materials, labor, and to initiate procurement of vehicle subsystems.

<b>Support (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Program Mgmt - LAV	MIPR	TACOM : Warren, MI	0.000	0.000		2.250	Dec 2019	5.199	Dec 2020	-		5.199	Continuing	Continuing	Continuing
Analysis of Alternatives	MIPR	TACOM : Warren, MI	0.000	0.000		0.400	Nov 2019	0.000		-		0.000	0.000	0.400	-
<b>Subtotal</b>			0.000	0.000		2.650		5.199		-		5.199	Continuing	Continuing	N/A

**Remarks**  
The additional funding for program management provides for increased support required for prototyping vendors & associated engineering support. It also funds support necessary to develop milestone documentation.

<b>Management Services (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
AOA Support Contract	C/FFP	HII-MDIS : Huntsville, AL	0.000	0.000		0.350	Nov 2019	0.000		-		0.000	0.000	0.350	-
<b>Subtotal</b>			0.000	0.000		0.350		0.000		-		0.000	0.000	0.350	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2021 Navy</b>								<b>Date:</b> February 2020				
<b>Appropriation/Budget Activity</b> 1319 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys				<b>Project (Number/Name)</b> 1558 / Armored Reconnaissance Vehicle				
	<b>Prior Years</b>	<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	0.000	0.000		7.700		20.199	-		20.199	Continuing	Continuing	N/A

**Remarks**

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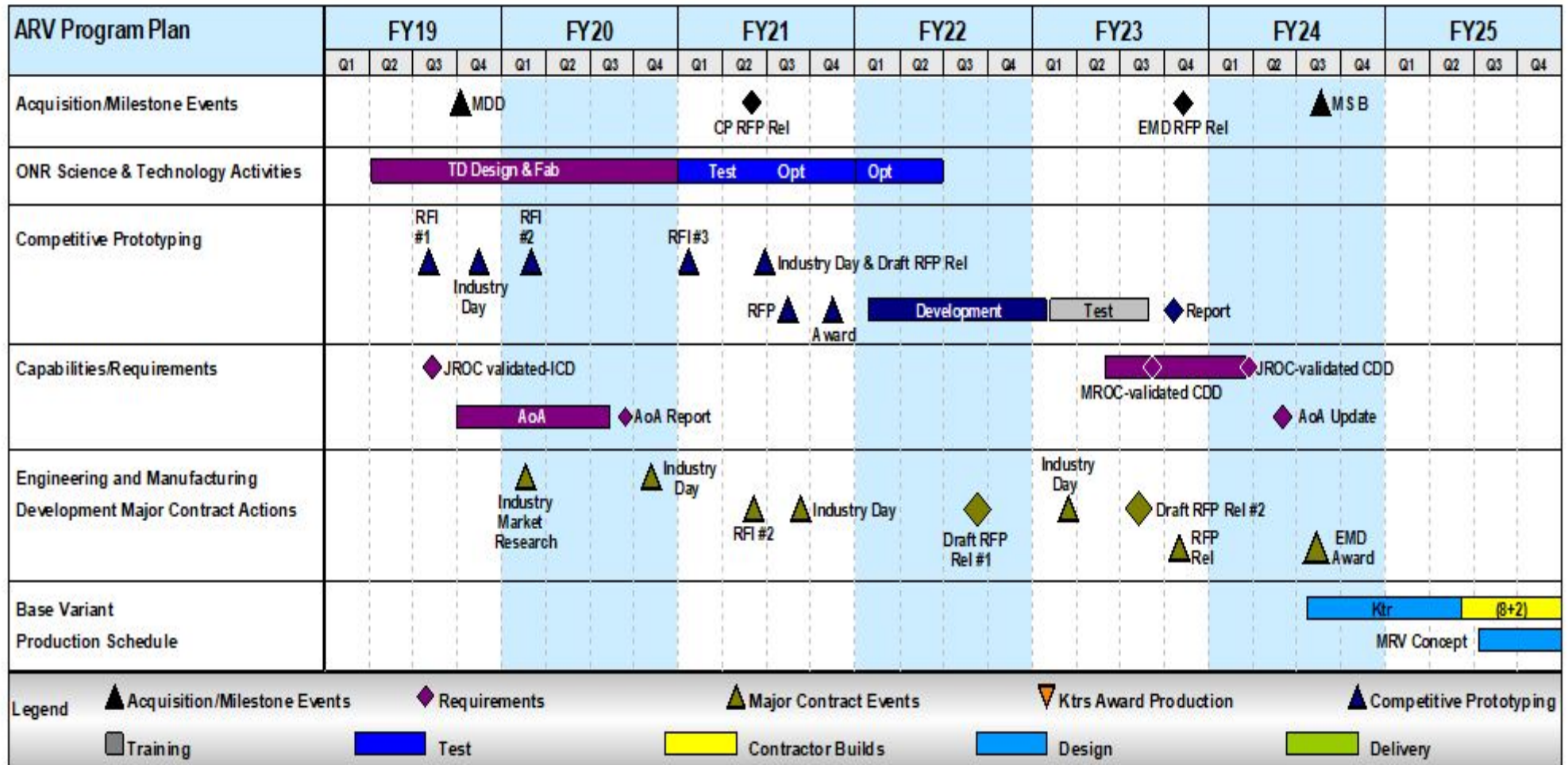
Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

Date: February 2020

Appropriation/Budget Activity  
1319 / 4

R-1 Program Element (Number/Name)  
PE 0603635M / Marine Corps Grnd Cmbt/  
Supt Sys

Project (Number/Name)  
1558 / Armored Reconnaissance Vehicle



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 1558 / <i>Armored Reconnaissance Vehicle</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Project C1558 ARV</i></b>				
Material Development Decision	4	2019	4	2019
ARV Analysis of Alternatives	4	2019	3	2020
Competitive Prototype Award	4	2021	4	2021
Competitive Prototype Dev and Testing	1	2022	3	2023
RFP Release for EMD	4	2023	4	2023
Source Selection	1	2024	2	2024
MS B and EMD Contract Award	3	2024	3	2024

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys					<b>Project (Number/Name)</b> 2614 / SMAW Follow-On		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
2614: SMAW Follow-On	23.100	0.000	0.000	0.500	-	0.500	0.500	0.500	2.000	2.040	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Follow on to Shoulder-Launched Multipurpose Assault Weapon (SMAW) (FOTS):

The solution to the Follow on to SMAW (FOTS) capability requirement is a Family of Marine-portable Rocket Systems. This Family of Systems is composed of separate lightweight, short-range, and fire-and-forget weapons. The Family of Systems will be deployed to Marine Infantry Squads and Combat Engineer Battalions across the spectrum of conflict, under all environmental conditions, to neutralize or destroy a variety of ground targets including personnel, thin-skinned vehicles, and positions. The Family of Systems include the SMAW MK-153 Mod 0, SMAW MK-153 Mod 2, and the Multi-purpose Anti-Armor Weapon System (MAAWS) M3A1.

SMAW Mod 2 integrated a laser range finder and thermal weapon sight onto the improved SMAW launcher. The improved system is a lighter, more accurate, easier to maintain, and more reliable replacement to the SMAW Mod 0 launcher.

The MAAWS M3A1 is a multipurpose, man-portable, line-of-sight, reloadable, recoilless, anti-armor and anti-personnel weapon system. It is a revision of the 84mm Carl Gustaf (M3) man-portable, recoilless rifle produced by Saab Bofors Dynamics. This system will enable the Marine Infantry Squads and Combat Engineer Battalions to engage in offensive and defensive operations with anti-armor, anti-personnel, anti-material, and assault capabilities. The MAAWS consists of the M3A1 Carl Gustaf Recoilless Rifle, Fire Control System and MeOpta red dot back up sight. Munitions include two Sub-caliber Adapter Training Devices and a suite of 84mm ammunition with greater capabilities than the SMAW Mod 2 system. The suite of 84mm ammunition provides obscuration, illumination, personnel denial, armored vehicle denial and penetration, bunker and hardened facility penetration, and soft target destruction capabilities to meet various mission requirements.

The MAAWS M3A1 is a joint Army and USMC program managed by the US Army's Program Executive Office Soldier. A Joint Operational Requirements Document (JORD) set forth the performance specifications for the system for both the Army and the USMC. The Army conducted test and evaluation of the system based on the performance specifications in the JORD.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> MAAWS Test and Evaluation	0.000	0.000	0.500	0.000	0.500
<b>Articles:</b>	-	-	-	-	-
<b>FY 2020 Plans:</b> N/A					
<b>FY 2021 Base Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 2614 / <i>SMAW Follow-On</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
- Complete the qualification testing of the 20mm training round to obtain a full material release and type certification for USMC procurement and fielding.					
- Complete the USMC test and evaluation of a programmable MAAWS round being developed by the Army.					
- Complete the USMC test and evaluation of the replacement red dot back-up sight for the MAAWS being developed by the Army.					
<b><i>FY 2021 OCO Plans:</i></b> N/A					
<b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> Increase of \$500k in FY21 funds the test and evaluation of new ammunition and replacement red dot back-up sight for the MAAWS M3A1 to meet Marine Corps requirements due to limited Army test data for ruggedness, range performance, and squad integration.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	0.500	0.000	0.500

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• PMC/3016: <i>Multi-role Anti-Armor Anti-personnel Weapon System (MAAWS)</i>	13.590	21.913	21.891	-	21.891	21.885	21.894	21.892	22.330	0.000	252.969

**Remarks**

**D. Acquisition Strategy**  
The acquisition strategy is to complete required Marine Corps test and evaluation of replacement red dot back-up sight for the MAAWS M3A1 from the original configuration of the Iron Sights. This includes MAAWS Qualification and Performance testing of 20mm Training Sub-Cal Adapter round, testing of Programmable MAAWS Round, Testing of Red Dot Back up Sight and Engineering and Technical Support. The Marine Corps will leverage a U.S. Army sole source, three year, Firm Fixed Price, Indefinite Delivery and Indefinite Quantity contract to procure the M3A1 Rifle from Saab Dynamics, and the Army's three year, order dependent, Basic Ordering Agreement for the Sub Caliber Adapter, and the FCS13RE through a US Special Operations Command's three year, sole source, Firm Fixed Price contract, and the ammunition through a five year, sole source, Firm Fixed Price, Indefinite Delivery Indefinite Quantity contract for the MAAWS M3A1.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 4				PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys				2614 / SMAW Follow-On							
<b>Support (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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 Cumulative Funding	Various	Various : Various	17.685	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			17.685	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
MAAWS Testing	WR	NSWC : Crane, IN	0.000	0.000		0.000		0.360	Jan 2021	-		0.360	0.000	0.360	-
<b>Subtotal</b>			0.000	0.000		0.000		0.360		-		0.360	0.000	0.360	N/A
<b>Management Services (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Engineering Support	C/FFP	MCSC : Quantico, VA	0.000	0.000		0.000		0.140	Nov 2020	-		0.140	0.000	0.140	-
Prior Year Cumulative Funding	Various	Various : Various	5.415	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			5.415	0.000		0.000		0.140		-		0.140	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			23.100	0.000		0.000		0.500		-		0.500	Continuing	Continuing	N/A
<b>Remarks</b>															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 2614 / <i>SMAW Follow-On</i>

	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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
<b>Proj 2614</b>																												
MAAWS Qualification and Performance Testing: 20mm Training Round																												
MAAWS Qualification and Performance Testing: Programmable MAAWS Round																												
MAAWS Qualification and Performance Testing: Red Dot Back up Sight																												
MAAWS ECP Development: Engineering and Technical Support																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 2614 / <i>SMAW Follow-On</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2614</b>				
MAAWS Qualification and Performance Testing: 20mm Training Round	2	2021	1	2022
MAAWS Qualification and Performance Testing: Programmable MAAWS Round	2	2021	1	2022
MAAWS Qualification and Performance Testing: Red Dot Back up Sight	2	2021	1	2022
MAAWS ECP Developemnt: Engineering and Technical Support	1	2022	4	2025

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys				<b>Project (Number/Name)</b> 6637 / Ground Based Anti-Ship Missile			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
6637: Ground Based Anti-Ship Missile	0.000	0.000	0.000	64.207	-	64.207	29.768	29.774	21.645	22.080	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

In FY21, the Navy/Marine Expeditionary Ship Interdiction System (NMESIS)/Ground Based Anti-Ship Missile (GBASM) effort was moved from BA04/PE 0603635M/Project 7400 into BA04/PE 0603635M/Project 6637 and is now referred to as GBASM.

**A. Mission Description and Budget Item Justification**

A RDT&E effort to develop long term and short term solutions for a GBASM to be integrated within a USMC Artillery Battalion and sustain a Joint Force military advantage. This capability is in support of the Marine Corps Expeditionary Advanced Base Operations (EABO) and the National Defense Strategy (NDS) approach to build a more lethal Joint Force. GBASM will prototype a USMC system using other Service-developed missiles to provide a ground based anti-access/area denial, anti-ship capability. The prototyping effort will include the development, design, build, and testing of a Remotely Operated Ground Unit Expeditionary-Fires (ROGUE-Fires) vehicle. ROGUE-Fires is an unmanned ground vehicle based on a Joint Light Tactical Vehicle (JLTV) chassis, capable of mounting a wide range of missile systems for dynamic force employment and supports the National Defense Strategy (NDS) objective to evolve innovative operational concepts.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> 6637: Ground Based Anti-Ship Missile	0.000	0.000	64.207	0.000	64.207
<b>Articles:</b>	-	-	-	-	-
<b>FY 2020 Plans:</b> Executed under Project 7400					
<b>FY 2021 Base Plans:</b> Integrate an existing ASM capability onto USMC ground platforms. Activities include: <ul style="list-style-type: none"> <li>- Deliver a prototype weapon sled and finalize Fire Control System design</li> <li>- Conduct full system user evaluations with vehicle, launcher and Fire Control System</li> <li>- Procure qualification launcher hardware</li> <li>- Procure qualification Fire Control systems hardware</li> <li>- Procure missiles for qualification and user evaluation testing</li> <li>- Conduct USN/USMC guided flight test</li> <li>- Test and refine tactics, techniques, and procedures (TTPs) with Marine operators</li> <li>- Conduct mobility testing with vehicle and launcher systems</li> </ul>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 6637 / <i>Ground Based Anti-Ship Missile</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
- Update ROGUE-F design - Deploy Early Capability Release (ECR) launchers to a USMC High Mobility Artillery Rocket System (HIMARS) Battery for unit experimentation and evaluation  <b>FY 2021 OCO Plans:</b> N/A  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Increase of \$64.207M from FY20 to FY21 supports the realignment of \$43.297M from the NMESIS/GBASM program in BA04/PE 0603635M/Project 7400 to BA04/PE 0603635M/Project 6637 and \$20.91M supports the purchase of test missiles and updated ROGUE-F design.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	64.207	0.000	64.207

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/ BLI 2212: <i>High Mobility Artillery Rocket System</i>	130.981	95.686	174.687	-	174.687	96.458	81.802	69.457	70.668	0.000	719.739

**Remarks**

BLI 2212 includes procurement efforts in support of Ground Based Anti-Ship Missile and High Mobility Artillery Rocket System (HIMARS).

**D. Acquisition Strategy**

GBASM RDT&E efforts for USMC support the EABO and NDS to employ High Mobility Artillery Rocket System (HIMARS) as a Sea Control capability from distributed locations to support distributed maneuver. Support the continued development of long-range precision fire capabilities from austere and expeditionary bases. Development will consist of the design integration and support from a combination of Army/Navy labs and multiple DoD contractors.

GBASM uses an existing missile contract with the Navy to acquire test missiles. Launcher and Fire Control Systems use two Other Transaction Agreements (OTA) competitively awarded in FY18 and FY19 with a phased approach to integrate missile and fire control systems (FCS) with a USMC vehicle. The ROGUE-Fires project ranges from using off-the-shelf systems, modifications to existing developmental items and integration and support from a combination of Army/Navy labs and multiple DOD contractors. The ROGUE-Fires vehicle and weapon sled have a government controlled Initial Capabilities Document (ICD) that allows separate competitive procurement which is planned after completion of the initial deployment and user evaluation.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys	<b>Project (Number/Name)</b> 6637 / Ground Based Anti-Ship Missile
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<b>Product Development (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
GBASM Development	C/CPFF	Raytheon Company : Tucson, AZ	0.000	0.000		0.000		31.000	Dec 2020	-		31.000	23.000	54.000	54.000
ROGUE-Fires Development	C/CPFF	Osh Kosh : Osh Kosh, WI	0.000	0.000		0.000		9.000	Dec 2020	-		9.000	17.000	26.000	26.000
<b>Subtotal</b>			0.000	0.000		0.000		40.000		-		40.000	40.000	80.000	N/A

<b>Support (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
GBASM Safety	WR	NSWC-IH : Indian Head, MD	0.000	0.000		0.000		0.500	Dec 2020	-		0.500	1.000	1.500	-
GBASM Cybersecurity/IA	MIPR	PFRMS/AMRDEC : Redstone, AL	0.000	0.000		0.000		0.030	Dec 2020	-		0.030	0.060	0.090	-
<b>Subtotal</b>			0.000	0.000		0.000		0.530		-		0.530	1.060	1.590	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
GBASM Flight Test	WR	NAS : Point Mugu, CA	0.000	0.000		0.000		4.000	Feb 2021	-		4.000	3.000	7.000	-
GBASM Missile Procurement for Testing	C/FFP	Raytheon : Tuscon, AZ	0.000	0.000		0.000		16.100	Dec 2020	-		16.100	1.200	17.300	17.300
GBASM Engineer	MIPR	NSWC-WD : China Lake, CA	0.000	0.000		0.000		1.621	Dec 2020	-		1.621	3.200	4.821	-
ROGUE Engineer	MIPR	NSWC-DD : Dahlgren, VA	0.000	0.000		0.000		1.379	Dec 2020	-		1.379	2.800	4.179	-
User Eval & Mobility Test	MIPR	NATC : Carson City, NV	0.000	0.000		0.000		0.500	Dec 2020	-		0.500	4.000	4.500	-
<b>Subtotal</b>			0.000	0.000		0.000		23.600		-		23.600	14.200	37.800	N/A



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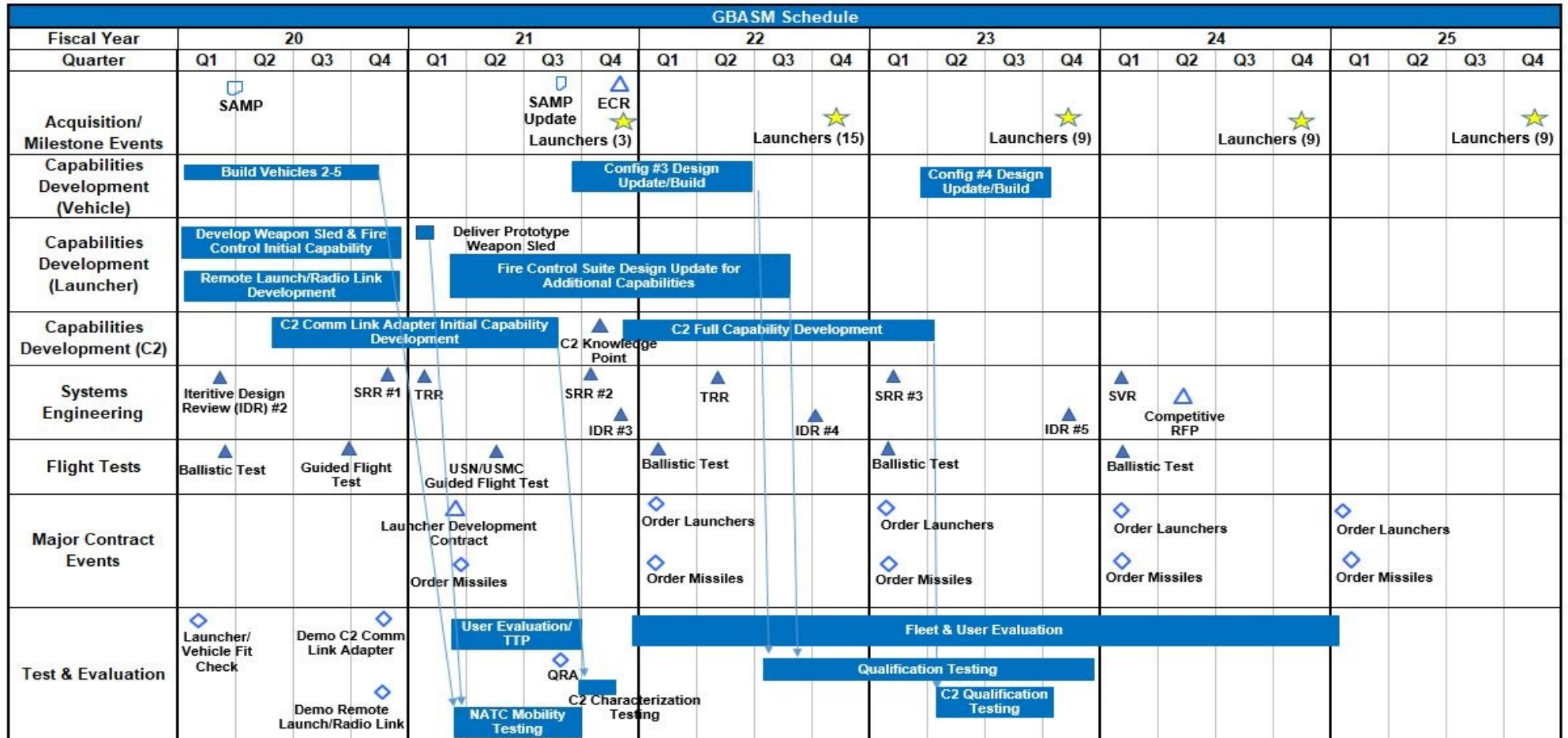
Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

Date: February 2020

Appropriation/Budget Activity  
1319 / 4

R-1 Program Element (Number/Name)  
PE 0603635M / Marine Corps Grnd Cmbt/  
Supt Sys

Project (Number/Name)  
6637 / Ground Based Anti-Ship Missile



\* Launcher (consists of ROGUE and Weapon Sled)  
\* Missile

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 6637 / <i>Ground Based Anti-Ship Missile</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 6637</i></b>				
Ballistic Test	1	2020	1	2020
Guided Flight Test	3	2020	3	2020
User Evaluation/TTP	1	2021	3	2021
NATC Mobility Testing	1	2021	3	2021
USN/USMC Guided Flight Test	2	2021	2	2021

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**Exhibit R-2A, RDT&E Project Justification:** PB 2021 Navy **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys	<b>Project (Number/Name)</b> 6638 / Long Range Fires
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
6638: Long Range Fires	0.000	0.000	0.000	75.000	-	75.000	100.000	100.000	0.000	0.000	0.000	275.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Project details held at a higher classification level.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<b>Title:</b> 6638 Classified	0.000	0.000	75.000	0.000	75.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2020 Plans:</b> Project details held at a higher classification level.					
<b>FY 2021 Base Plans:</b> Project details held at a higher classification level.					
<b>FY 2021 OCO Plans:</b> N/A					
<b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Project details held at a higher classification level.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	75.000	0.000	75.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

Project details held at a higher classification level.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys	<b>Project (Number/Name)</b> 6638 / Long Range Fires
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<b>Product Development (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Classified	Various	Not Specified : Not Specified	0.000	0.000		0.000		75.000	Oct 2020	-		75.000	0.000	75.000	-
<b>Subtotal</b>			0.000	0.000		0.000		75.000		-		75.000	0.000	75.000	N/A

**Remarks**  
Details held at a higher classification level.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	0.000	0.000	75.000	-	75.000	0.000	75.000	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2021 Navy</b>		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 6638 / <i>Long Range Fires</i>

FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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

<b>Proj 6638</b>	
Details held at a higher classification	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 6638 / <i>Long Range Fires</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 6638</b>				
Details held at a higher classification	1	2020	4	2023

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys				<b>Project (Number/Name)</b> 7400 / Combat Capability Development Transition			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
7400: <i>Combat Capability Development Transition</i>	0.000	0.000	44.297	29.697	-	29.697	36.684	0.000	0.000	0.000	0.000	110.678
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

In FY21, the Navy/Marine Expeditionary Ship Interdiction System (NMESIS)/Ground Based Anti-Ship Missile (GBASM) effort was moved from BA04/PE 0603635M/Project 7400 into BA04/PE 0603635M/Project 6637.

**A. Mission Description and Budget Item Justification**

NMESIS/GBASM is a RDT&E effort to develop long term and short term solutions for an Anti-Ship Missile (ASM) to be integrated within a High Mobility Artillery Rocket System (HIMARS) Battalion and sustain a Joint Force military advantage. This capability is in support of the Marine Corps Expeditionary Advanced Base Operations (EABO) and the National Defense Strategy (NDS) approach to build a more lethal Joint Force. NMESIS/GBASM will prototype a USMC system while leveraging other Service-developed missiles to provide ground based anti-access/area denial, anti-ship capability. The prototyping effort will include the development, design, build, and initial testing of a Remotely Operated Ground Unit Expeditionary-Fires (ROGUE-Fires) vehicle. ROGUE-Fires is an unmanned ground vehicle based on a Joint Light Tactical Vehicle (JLTV) chassis, capable of mounting a wide range of missile systems for dynamic force employment and supports the National Defense Strategy (NDS) objective to evolve innovative operational concepts.

The Long Range Unmanned Surface Vessel (LRUSV), formerly SEAMOB, is critical to future operations within the Joint Force Operating Scenario (JFOS) and Littoral Operations in a Contested Environment (LOCE). The LRUSV incorporates advanced Command and Control (C2) and targeting capabilities resulting in a Long Range Precision Fires (LRPF) system complimenting future Navy and Marine Corps operational concepts. The LRUSV will transition from a Science and Technology effort to a fielded capability providing an unmanned autonomous platform for the Organic Precision Fires (OPF) system. The LRUSV will be deployed in multiple phases. Phase 1 includes transition of the 11 meter RIB from the Strategic Capabilities Office (SCO) to the Marine Corps for initial development and transition to extended user evaluation platform. Phase 2 will be procurement of an improved hull solution for increased seakeeping capability and integration of OPF down selected in PE 0604657M. This phase will also integrate lessons learned from the 11 meter RIB evaluations. Phase 3 will be deployment of the extended user evaluation (EUE) system. Phase 4 will be production and sustainment of the LRUSV capability. When employed with the OPF, the LRUSV will provide an initial lethal capability with planned incremental enhancements that will incorporate swarming and providing new capabilities supporting naval expeditionary forces.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> Navy/Marine Expeditionary Ship Interdiction System (NMESIS)	0.000	43.297	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2020 Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy			<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 7400 / <i>Combat Capability Development Transition</i>			
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
Continue integration of an existing ASM capability onto USMC ground platforms. Activities include:					
<ul style="list-style-type: none"> <li>- Develop initial prototype design and testing</li> <li>- Integrate ASM sled on a ROGUE vehicle</li> <li>- Develop and build ROGUE-Fires fire control and test ASM command and control concept</li> <li>- Build ROGUE vehicles and conduct off road testing</li> <li>- Conduct initial firing tests of NMESIS/GBASM capability</li> <li>- Conduct inert ballistic missile firing tests</li> <li>- Conduct user evaluations with vehicles</li> <li>- Test existing C2 kill chain with various sensors and Naval platforms for GBASM sea based targets</li> <li>- Develop tactics, techniques, and procedures (TTPs) with Marine operators</li> <li>- Procure inert missiles for testing and live fire events</li> <li>- Conduct design analysis on longer range capability</li> </ul>					
<b>FY 2021 Base Plans:</b>					
NMESIS/GBASM program was realigned in FY21 from BA04/PE 0603635M Project 7400 to BA04/PE 0603635M/Project 6637.					
<b>FY 2021 OCO Plans:</b>					
N/A					
<b>FY 2020 to FY 2021 Increase/Decrease Statement:</b>					
Decrease of \$43.297M from FY20 to FY21 supports the realignment of the NMESIS/GBASM program from BA04/PE 0603635M/Project 7400 to BA04/PE 0603635M/Project 6637.					
<b>Title:</b> Long Range Unmanned Service Vessel (LRUSV)					
<b>Articles:</b>					
	0.000	1.000	29.697	0.000	29.697
	-	-	3	-	3
<b>FY 2020 Plans:</b>					
In FY20, an emerging LRUSV capability transitioned from the Strategic Capabilities Office (SCO) to the Marine Corps for continued development and deployment. FY20 efforts include the following objectives:					
<ul style="list-style-type: none"> <li>- Begin HW/SW improvements to the 11 meter RIB</li> <li>- Assess and implement SCO lessons learned to LRUSV platform and weapons deck</li> </ul>					
<b>FY 2021 Base Plans:</b>					
- Procure three LRUSV vessels with improved hulls for increased seakeeping capability					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 7400 / <i>Combat Capability Development Transition</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
- Complete HW/SW improvements (autonomy and C2 capabilities) to the 11 meter RIB for transition to prototype vessels - Conduct HW/SW and OPF-M integration testing on the 11 meter RIB - Procure three launchers for 11 meter RIBs consisting of OPF weapons platform and limited munitions - Conduct live fire demonstration off 11 meter RIB - Procure three launchers for prototype vessels consisting of weapons platform and limited munitions  <b>FY 2021 OCO Plans:</b> N/A  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> The increase of \$28.697M from FY20 to FY21 is a result of the procurement of three improved LRUSV prototype vessels, launchers, and development and operational testing.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	44.297	29.697	0.000	29.697

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTEN/ Proj 6637: <i>Ground Based Anti-Ship Missile</i>	0.000	0.000	64.207	-	64.207	29.768	29.774	21.645	22.080	Continuing	Continuing
• PMC/ BLI 2212: <i>High Mobility Artillery Rocket System</i>	130.981	95.686	176.687	-	176.687	96.458	81.802	69.457	70.668	0.000	721.739
• PMC/0206211M/6518: <i>Long Range Unmanned Surface Vessels</i>	0.000	0.000	0.000	-	0.000	0.000	37.760	30.400	31.008	0.000	99.168
• RDTEN/0604657M: <i>Organic Precision Fires</i>	0.000	20.085	33.784	-	33.784	4.986	0.000	0.000	0.000	0.000	58.855

**Remarks**  
 1) FY23 initiates LRUSV procurement funding line within BLI 6518  
 2) BLI 2212 includes procurement efforts in support of Ground Based Anti-Ship Missile and High Mobility Artillery Rocket System.

**D. Acquisition Strategy**  
 NMESIS/GBASM uses an existing missile contract with the Navy to acquire test missiles. Launcher and Fire Control Systems use two competitively awarded Other Transaction Agreements (OTA) with a phased approach to integrate missile and fire control systems (FCS) with a USMC vehicle. The ROGUE-Fires project ranges

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 7400 / <i>Combat Capability Development Transition</i>

from using off-the-shelf systems, modifications to existing developmental items and integration and support from a combination of Army/Navy labs and multiple DOD contractors.

The LRUSV capability will transition from SCO to the Marine Corps in FY20. In FY21, three baseline prototype vessels will be procured using an existing Navy contract. These vessels will be integrated with the competitively selected Organic Precisions Fires (OPF) munition which is being matured under PE 0604657M/BA05. Logistical support for the LRUSV will initially be commercially procured using an existing naval contract and will transition to a combination of contracted and organic support as the program matures.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2021 Navy</b>											<b>Date:</b> February 2020				
<b>Appropriation/Budget Activity</b> 1319 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys				<b>Project (Number/Name)</b> 7400 / Combat Capability Development Transition							

<b>Product Development (\$ in Millions)</b>				<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>		<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
NMESIS ASM OTA	C/CPFF	Raytheon Company : Tucson, AZ	0.000	0.000		31.350	Jan 2020	0.000		-		0.000	0.000	31.350	-
NMESIS Rogue Fires Development	C/CPFF	Osh Kosh : Osh Kosh, WI	0.000	0.000		6.600	Feb 2020	0.000		-		0.000	0.000	6.600	-
LRUSV HW/SW Improvements	WR	NSWC : Carterock, Det Norfolk	0.000	0.000		0.914	Apr 2020	0.000		-		0.000	0.000	0.914	-
LRUSV HW/SW Improvements	WR	NSWC : various	0.000	0.000		0.000		3.473	Oct 2020	-		3.473	0.000	3.473	-
LRUSV Prototype Vessel	C/CPFF	Navy PM S406 : Washington DC	0.000	0.000		0.000		18.014	Mar 2021	-		18.014	0.000	18.014	-
LRUSV 11m RIB Launcher	C/FFP	TBD : TBD	0.000	0.000		0.000		1.200	Jan 2021	-		1.200	0.000	1.200	-
LRUSV Prototype Vessel Launcher	C/FFP	TBD : TBD	0.000	0.000		0.000		1.200	Aug 2021	-		1.200	0.000	1.200	-
<b>Subtotal</b>			0.000	0.000		38.864		23.887		-		23.887	0.000	62.751	N/A

**Remarks**  
LRUSV - \$18.014M procures the Early Deployment systems that will includes the vessel and launcher.

<b>Support (\$ in Millions)</b>				<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>		<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
LRUSV Engineering Support	WR	NSWC : Various	0.000	0.000		0.000		2.485	Oct 2020	-		2.485	0.000	2.485	-
NMESIS Engineering Support - ASM	WR	NSWC : China Lake, CA	0.000	0.000		0.497	Jan 2020	0.000		-		0.000	0.000	0.497	-
NMESIS Safety	WR	NSWC : Indian Head, MD	0.000	0.000		0.247	Jan 2020	0.000		-		0.000	0.000	0.247	-
NMESIS Engineering - ROGUE	WR	NSWC : Dahlgren, VA	0.000	0.000		1.503	Jan 2020	0.000		-		0.000	0.000	1.503	-
<b>Subtotal</b>			0.000	0.000		2.247		2.485		-		2.485	0.000	4.732	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / Marine Corps Grnd Cmbt/ Supt Sys	<b>Project (Number/Name)</b> 7400 / Combat Capability Development Transition
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<b>Support (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			

**Remarks**  
 NMESIS/GBASM (Long Range Precision Fires, Sea Control) engineering effort will support weapons sled development and vehicle integration to include system and requirements development and evaluation activities. Evaluation activities include booster vehicle test and system demonstration at Point Mugu.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
NMESIS ASM Missile Testing	WR	NAS : Point Mugu, CA	0.000	0.000		1.983	Apr 2020	0.000		-		0.000	0.000	1.983	-
NMESIS Vehicle/Booster Testing	WR	NSWC : China Lake, CA	0.000	0.000		0.967	Oct 2019	0.000		-		0.000	0.000	0.967	-
LRUSV Testing	Various	Various : Various	0.000	0.000		0.000		3.139	Oct 2020	-		3.139	0.000	3.139	-
<b>Subtotal</b>			0.000	0.000		2.950		3.139		-		3.139	0.000	6.089	N/A

<b>Management Services (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
LRUSV Travel	Various	Various : Various	0.000	0.000		0.086	Oct 2019	0.186	Oct 2020	-		0.186	0.000	0.272	-
NMESIS Travel	Various	Various : Various	0.000	0.000		0.150	Feb 2020	0.000		-		0.000	0.000	0.150	-
<b>Subtotal</b>			0.000	0.000		0.236		0.186		-		0.186	0.000	0.422	N/A

			Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			0.000	0.000	44.297	29.697	-	29.697	0.000	73.994	N/A

**Remarks**

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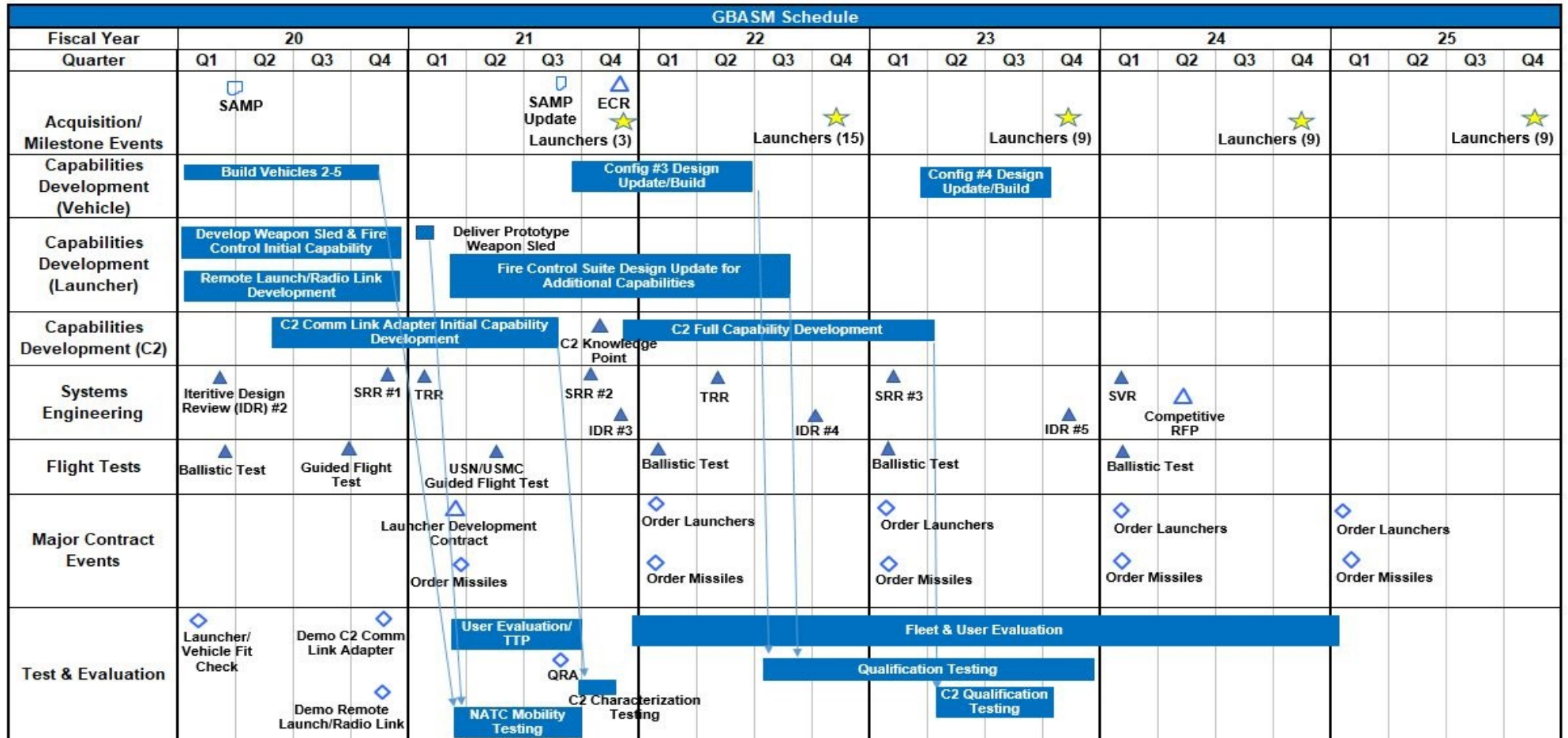
Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

Date: February 2020

Appropriation/Budget Activity  
1319 / 4

R-1 Program Element (Number/Name)  
PE 0603635M / Marine Corps Grnd Cmbt/  
Supt Sys

Project (Number/Name)  
7400 / Combat Capability Development  
Transition



\* Launcher (consists of ROGUE and Weapon Sled)  
\* Missile

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

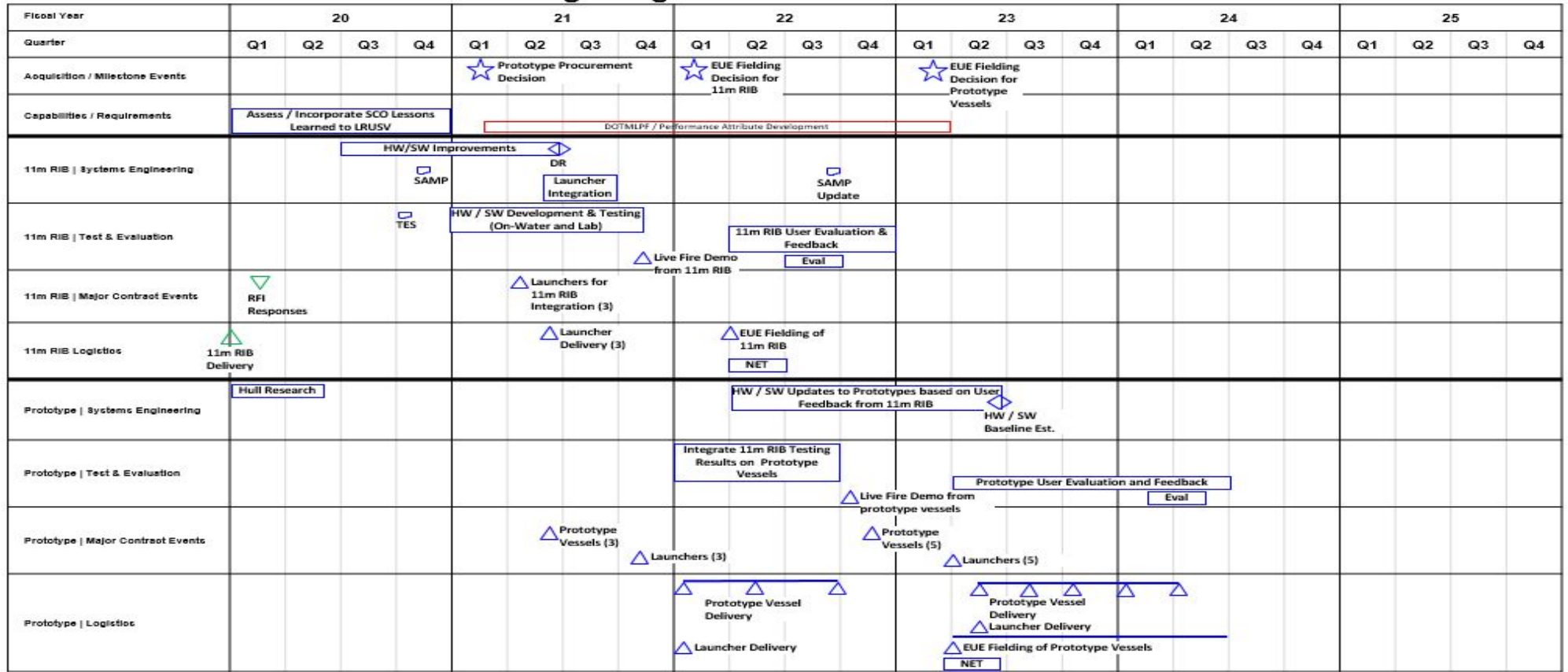
Date: February 2020

Appropriation/Budget Activity  
1319 / 4

R-1 Program Element (Number/Name)  
PE 0603635M / Marine Corps Grnd Cmbt/  
Supt Sys

Project (Number/Name)  
7400 / Combat Capability Development  
Transition

**Long Range Unmanned Surface Vessel**



**Legend**

- ★ MDA Decision Approval (non-MS)
- ◆ Review
- Documentation
- ▲ Milestone / Key Acquisition Event
- ▼ Assessments, Proposals

**Hardware & Software**  
 HW / SW Improvement 1: 11m RIB suite with upgrades to incorporate UMAA and CCS, existing Launchers, Coyote Blk III re-use

**Prototype**  
 Improved hull for operational environment with integrated OPF-M launcher and munition.

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Navy		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603635M / <i>Marine Corps Grnd Cmbt/ Supt Sys</i>	<b>Project (Number/Name)</b> 7400 / <i>Combat Capability Development Transition</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 7400</b>				
LRUSV HW/SW Improvements	3	2020	2	2021
LRUSV HW/SW Development and Testing 11m RIB	1	2021	4	2021
LRUSV 11m RIB Launcher Procurement	2	2021	2	2021
LRUSV Prototype Vessel Procurement	3	2021	3	2021
LRUSV Prototype Vessel Launcher Procurement	4	2021	4	2021