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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	839.255	84.344	106.036	83.900	-	83.900	99.478	98.365	90.635	90.600	Continuing	Continuing
1555: <i>Lt Armored Vehicle Prog</i>	140.689	0.727	1.125	1.880	-	1.880	3.574	3.433	3.498	3.568	Continuing	Continuing
1901: <i>MC Grnd Wpnry Prod Improvement</i>	69.854	7.215	8.435	10.543	-	10.543	6.764	6.385	6.479	6.610	Continuing	Continuing
2086: <i>Soldier/Marine Enhancement</i>	41.987	0.957	1.483	2.357	-	2.357	2.293	2.171	2.209	2.253	Continuing	Continuing
2112: <i>Lightweight 155mm Howitzer</i>	6.703	1.967	0.015	0.015	-	0.015	0.013	0.013	0.012	0.012	Continuing	Continuing
2237: <i>Amphibious Vehicle Test</i>	20.366	2.795	2.733	3.246	-	3.246	3.103	3.084	3.136	3.199	Continuing	Continuing
2315: <i>Training Devices/Simulators</i>	192.826	35.090	36.833	27.494	-	27.494	35.222	30.701	28.442	28.935	Continuing	Continuing
2503: <i>Initial Issue</i>	68.130	4.213	13.294	5.850	-	5.850	13.961	14.904	11.114	11.379	Continuing	Continuing
2513: <i>Body Armor</i>	52.897	4.518	5.468	5.269	-	5.269	4.814	4.899	4.980	5.080	Continuing	Continuing
2530: <i>Unmanned Expeditionary Systems</i>	0.000	0.000	0.000	16.039	-	16.039	11.339	10.949	10.282	8.673	Continuing	Continuing
2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>	49.497	0.494	0.512	0.521	-	0.521	0.527	0.536	0.545	0.556	Continuing	Continuing
3098: <i>Fire Support System</i>	173.619	2.761	2.241	3.335	-	3.335	11.055	15.362	15.433	15.741	Continuing	Continuing
3774: <i>Marine Corps Ammo</i>	4.001	10.084	10.724	5.100	-	5.100	4.947	4.220	2.763	2.818	Continuing	Continuing
3775: <i>Family of Internally Transportable Vehicles (FITV)</i>	5.266	0.871	0.000	0.383	-	0.383	0.340	0.252	0.257	0.262	Continuing	Continuing
4002: <i>Family of Raid Reconnaissance</i>	13.420	12.652	17.673	1.868	-	1.868	1.526	1.456	1.485	1.514	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	0.000	5.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.500

A. Mission Description and Budget Item Justification

This Program Element (PE) provides modification to Marine Corps Expeditionary Ground Force Weapon Systems to increase lethality, range, survivability and operational effectiveness. In addition, the PE provides for product improvements to the family of LAVs. The Amphibious Vehicle Test Branch (AVTB) provides facilities

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and personnel which perform a broad range of testing, repair and technical services to amphibious vehicles. This program is funded under Operational Systems Development PE because it encompasses engineering and manufacturing and manufacturing development for upgrades of existing systems.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	103.810	100.536	110.311	-	110.311
Current President's Budget	84.344	106.036	83.900	-	83.900
Total Adjustments	-19.466	5.500	-26.411	-	-26.411
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-17.194	0.000			
• SBIR/STTR Transfer	-2.273	0.000			
• Program Adjustments	0.000	0.000	-23.092	-	-23.092
• Rate/Misc Adjustments	0.001	0.000	-3.319	-	-3.319

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

Project: 9999: *Congressional Adds*

Congressional Add: *Integrated helmet system*

	FY 2022	FY 2023
Congressional Add Subtotals for Project: 9999	0.000	5.500
Congressional Add Totals for all Projects	0.000	5.500

Change Summary Explanation

The decrease of \$22.136M from FY 2023 to FY 2024 is primarily due to the following program adjustments within the PE:

- 1) Decrease attributed to completion of ISMT ballistic testing and data capture, FET SVET design, and RTAM Ballistic Concrete testing.
- 2) Decrease due to the realignment of funds to PE 0603635M RD TEN to support the advanced prototyping development conducted by the Office of Naval Research for the Low Profile Distribution System and reduced product development of NexGen MCCUU/Close Combat Uniform.
- 3) Decrease due to the reduction of ammunition packaging efforts in FY 2024.

The FY 2024 funding request was adjusted by \$7.019M to account for the availability of prior year execution balances.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 1555 / Lt Armored Vehicle Prog			
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
1555: Lt Armored Vehicle Prog	140.689	0.727	1.125	1.880	-	1.880	3.574	3.433	3.498	3.568	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Family of Light Armored Vehicles (FOLAV) consists of six fielded Light Armored Vehicle (LAV) configurations and one communications/intelligence-configured asset on an LAV chassis. The FOLAV provides a logistically self-contained, highly mobile, and lethal combined arms combat system to the Marine Air Ground Task Force (MAGTF). The LAV Product Improvement Program (PIP) funds modification and sustainment activities and the development and testing of modifications. These programs will ensure that the FOLAV is capable of conducting its assigned missions by enhancing lethality, survivability, reliability, availability, and maintainability in addition to reducing operations and support costs.

FY 2024 funds continued support to the fielded LAV fleet and future Engineering Change Proposals. RDTE allows for resolution of obsolescence, safety and any other unplanned issues that arise from the field.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: LAV MODIFICATIONS	0.727	1.125	1.880	0.000	1.880
Articles:	-	-	-	-	-
FY 2023 Plans: -Continue ongoing LAV MOD product development and Integrated Logistics Support (ILS) data development.					
FY 2024 Base Plans: -Continue ongoing LAV MOD product development and Integrated Logistics Support (ILS) data development.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 increase of \$0.755M required to continue to support the fielded LAV fleet, future Engineering Change Proposals, and projected increase of obsolescence issues. RDTE allows for resolution of obsolescence, safety and any other unplanned issues that arise from the field.					
Accomplishments/Planned Programs Subtotals	0.727	1.125	1.880	0.000	1.880

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2024</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PMC/2038: LAV PIP	22.116	52.355	42.052	-	42.052	0.727	0.760	0.775	0.790	0.000	2,041.480

Remarks

D. Acquisition Strategy

The Light Armored Vehicle (LAV) Modification and Sustainment line is critical to keeping the 1983 built family of LAVs (FOLAV) operationally ready and effective through the projected sunset date of FY 2035. LAV Modification and Sustainment actions include maintenance of authority to operate (ATO), authority to connect (ATC), platform and C4ISR obsolescence management, safety modifications, support equipment/tool sustainment, end-item product data management, and technical and engineering data management. The LAV Modification and Sustainment resources a wide range of necessary vehicle/communications/weapon modifications essential to fleet life-cycle management and sustainment.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys					Project (Number/Name) 1555 / Lt Armored Vehicle Prog				

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development (MOD)	MIPR	Various : Warren, MI	1.550	0.362	Dec 2021	0.708	Jan 2023	0.956	Jan 2024	-		0.956	Continuing	Continuing	Continuing
ILS Data Development (MOD)	MIPR	Various : Warren, MI	0.357	0.100	Dec 2021	0.142	Jan 2023	0.639	Jan 2024	-		0.639	Continuing	Continuing	Continuing
Proj 1555: Prior Years Cumulative Funding	Various	Various : Various	101.963	0.000		0.000		0.000		-		0.000	0.000	101.963	-
Subtotal			103.870	0.462		0.850		1.595		-		1.595	Continuing	Continuing	N/A

Remarks
FY 2023 to FY 2024 increase required to continue to support the fielded LAV fleet and future Engineering Change Proposals. RDTE allows for resolution of obsolescence, safety and any other unplanned issues that arise from the field.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt (MOD)	MIPR	TACOM : Warren, MI	0.542	0.265	Dec 2021	0.275	Dec 2022	0.285	Dec 2023	-		0.285	Continuing	Continuing	Continuing
Proj 1555: Prior Years Cumulative Funding	Various	Various : Various	25.854	0.000		0.000		0.000		-		0.000	0.000	25.854	-
Subtotal			26.396	0.265		0.275		0.285		-		0.285	Continuing	Continuing	N/A

Remarks
Increase from FY2023 to Fy2024 is due to inflation.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	MIPR	RTC : AL	9.252	0.000		0.000		0.000		-		0.000	0.000	9.252	-
Subtotal			9.252	0.000		0.000		0.000		-		0.000	0.000	9.252	N/A

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

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Proj 1555	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
LAV MOD	Product/ILS Data Development																											
Empty grid for data entry																												

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1555				
LAV MOD: LAV MOD Product/ILS Data Development	1	2022	4	2028

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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1901: MC Grnd Wpnry Prod Improvement	69.854	7.215	8.435	10.543	-	10.543	6.764	6.385	6.479	6.610	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops joint and Marine Corps unique improvements to infantry weapons technology, non-lethal systems technology, improvements for Night Vision Equipment, Rifle Combat Optics, Family of Individual Optics, and monitors national and international weapons developments.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Company and Battalion Mortars (CBM)	0.000	0.200	0.200	0.000	0.200
Articles:	-	-	-	-	-
Description: Company and Battalion Mortars is a program that provides for continuous monitoring, research and development, integration and qualification testing, certification and accreditation, assessment, and implementation of multi-service and USMC unique system modifications and improvements for mortar and mortar fire control systems. Efforts include advance capability extended range mortar systems and mortar fire control systems using Android operating systems capable of digital communications, mapping, and geo-location. This includes software updates and Authority to Operate (ATO) documentation and certification.					
FY 2023 Plans:					
- Initiate development, prototypes, and testing of a new technology sight for the Mortars systems.					
- Initiate the integration of Lightweight Hand-held Mortar Ballistic Computer (LHMBC) sight into a Command and Control (C2) architecture.					
FY 2024 Base Plans:					
- Initiate research to extend the range of the 81mm Mortars.					
- Continue development, prototypes, and testing of a new technology sight for the Mortars systems.					
- Continue the integration of Lightweight Hand-held Mortar Ballistic Computer (LHMBC) sight into a Command and Control (C2) architecture.					
FY 2024 OCO Plans:					
N/A					
Title: Combat Optics	3.394	3.749	3.836	0.000	3.836

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Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 1901 / MC Grnd Wpnry Prod Improvement

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:	-	-	-	-	-
<p>Description: Combat Optics is a program that provides for research and development, as well as, ammunition to support testing and assessment of optical systems and implementation of modifications for these systems, as well as, life-cycle management efforts. The research and development of future capabilities include, but are not limited to variable power day optics and fused/multi-spectral (e.g., combined image intensifier, thermal imaging, and short wave infrared) optical and laser systems. The Squad Aiming Laser (SAL) will provide a complimentary aiming solution with the Squad Binocular Night Vision Goggle to increase the engagement ranges and probability of first round hits out to 300m and beyond. Combat Optics is also assessing systems and technologies applicable to Long Range Thermal systems to support sensor development for handheld and weapon mounted optics.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue modernization of the Electro Optical Support Facility (EOSF) to support source selection evaluations, characterization of emerging optical technologies, and life cycle management efforts to include specialized equipment to accurately and properly characterize/assess Squad Aiming Laser. - Continue system test, surveillance troubleshooting, maintenance and maintenance management, and supply chain management at the EOSF. - Research capabilities and requirements for future Night Vision Goggles (NVG). <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue modernization of the Electro Optical Support Facility (EOSF) to support source selection evaluations, characterization of emerging optical technologies, and life cycle management efforts to include specialized equipment to accurately and properly characterize/assess commercial solutions for Squad Aiming Laser and thermal imaging technology. - Continue system test, surveillance troubleshooting, maintenance and maintenance management, and supply chain management at the EOSF. - Initiate research of Long Range Thermal systems to support sensor development. - Assess systems and technologies applicable to Squad Aiming Laser. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase from FY 2023 to FY 2024 is due to assessing systems and technologies applicable to a Squad Aiming Laser.					
<p>Title: Family of Infantry Weapons Systems (FIWS)</p> <p align="right">Articles:</p> <p>Description: Family of Infantry Weapons Systems (FIWS) is a program that provides for continuous monitoring, research and development, assessment of and implementation of Joint Service and USMC unique system modifications, as well as new acquisition efforts. Efforts such as: sustain weapon capability, and improve the performance, maintainability, supportability, service life, ergonomics, and safety enhancements of Infantry Weapons Systems.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue product development for improvement of small arms weapon systems, to include suppressors, sniper and special purpose systems, and their ancillary support equipment meet emerging requirements. - Continue small arms engineering and testing. - Continue Product Improvement Program (PIP) testing and evaluation for multiple requirements as required. - Continue the procurement of various types of ammunition for performance evaluation currently under development. - Initiate NGSW testing to evaluate unique Marine Corps requirements. <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue product development for improvement of small arms weapon systems, to include suppressors, sniper and special purpose systems, and their ancillary support equipment meet emerging requirements. - Continue small arms engineering and testing. - Continue Product Improvement Program (PIP) testing and evaluation for multiple requirements as required. - Continue the procurement of various types of ammunition for performance evaluation currently under development. - Continue NGSW testing to evaluate unique Marine Corps requirements. - Initiate Lightweight Medium Machinegun testing and evaluation. <p>FY 2024 OCO Plans:</p>	3.821	4.486	6.507	0.000	6.507
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: An increase from FY 2023 to FY 2024 is due to the initiation of Lightweight Medium Machinegun development, testing and evaluation.					
Accomplishments/Planned Programs Subtotals	7.215	8.435	10.543	0.000	10.543

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
• PMC/2220-01: Family of Infantry Weapons Systems	13.984	5.517	10.605	-	10.605	38.367	41.929	51.967	53.007	Continuing	Continuing
• PMC/2220-02: Company and Battalion Mortars	3.528	3.210	3.278	-	3.278	3.348	3.418	3.490	3.560	Continuing	Continuing
• PMC/2220-03: Gunners Protection Kit	15.301	0.946	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	33.001
• PMC/4620-01: Combat Optics	93.103	80.573	92.943	-	92.943	192.240	186.181	137.382	140.130	Continuing	Continuing

Remarks

D. Acquisition Strategy

These programs range from off-the-shelf modifications to developmental items for safety, reliability, and technology upgrades to meet Marine Corps requirements.

Family of Infantry Weapons Systems (FIWS):
FIWS encompasses over 60 programs, efforts for improved weapon capability, operation, maintainability, supportability, service life, ergonomics, and safety enhancements by continuous monitoring, assessment, and implementation of joint service and United States Marine Corps (USMC)-unique weapon system modifications. The FIWS portfolio also includes support for various program/acquisition support activities, such as the procurement of ammunition related to those production verification activities.

Combat Optics:
Combat Optics acquisition, management, and contracting strategies support the research, development, modification, and improvement of optics, night vision, and laser systems such as magnified day optics, thermal imagers, image intensifying (I2) systems, lasers, and illuminators.

Company and Battalion Mortars:

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<p>Acquisition, management, and contracting strategies support multiservice and USMC unique system modifications and improvements for the lightweight company and battalion mortars and mortar fire control systems to provide immediate indirect fires in support of mounted and dismounted forces to the company and battalion level.</p> <p>Gunners Protection Kit (GPK): Acquisition, management, and contracting strategies to support a USMC unique system requirement for the Reducible Height Gunners Protection Kit (RHGPK) in support of loading and unloading vehicles aboard amphibious carriers. The RHGPK enables Joint Light Tactical Vehicles (JLTV), Medium/Heavy Tactical Vehicle Replacement (MTHR), and Logistics Vehicle System Replacement (LVS) to be transported in the lower vehicle stowage areas of Landing Platform/Dock (LPD 17) and Landing Helicopter Dock class ships.</p>		

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

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Company and Battalion Mortars: Mortar Sight	TBD	TBD : TBD	0.000	0.000		0.100	Jan 2023	0.100	Jan 2024	-		0.100	0.000	0.200	-
Combat Optics: ICATS	C/CPFF	MCSC : Quantico, VA	4.066	2.540	Dec 2021	0.000		0.000		-		0.000	0.000	6.606	-
Combat Optics: Squad Aiming Laser	MIPR	Various : Various	0.000	0.000		0.035	Jan 2024	2.356	Jun 2024	-		2.356	0.000	2.391	-
Family of Infantry Weapons Systems	MIPR	NSWC, Crane : Crane, IN	0.717	0.107	Jan 2022	0.000		0.550	Jan 2024	-		0.550	0.000	1.374	-
Family of Infantry Weapons Systems	Various	MCSC : Quantico, VA	0.000	0.013	May 2022	0.000		0.479	Jan 2024	-		0.479	0.000	0.492	-
Family of Infantry Weapons Systems	MIPR	NSWC, Corona : Fallbrook, CA	0.000	0.125	Jul 2022	0.000		0.000		-		0.000	0.000	0.125	-
Family of Infantry Weapons Systems	MIPR	NSWC, Carderock : Bethesda, MD	0.000	0.127	Aug 2022	0.000		0.000		-		0.000	0.000	0.127	-
Proj 1901: Prior Years Cum Funding (Product Dev)	Various	Various : Various	19.266	0.000		0.000		0.000		-		0.000	0.000	19.266	-
Subtotal			24.049	2.912		0.135		3.485		-		3.485	0.000	30.581	N/A

Remarks

An increase from FY 2023 to FY 2024 is primarily attributed to the development of the Squad Aiming Laser (SAL).

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combat Optics: Technical Engineering	WR	NSWC, Dahlgren : Dahlgren, VA	0.445	0.240	Jan 2022	0.250	Jan 2023	0.265	Jan 2024	-		0.265	0.000	1.200	-
Combat Optics: Technical Engineering	WR	NSWC, Crane : Crane, IN	2.212	0.000	Jan 2022	0.250	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Combat Optics: Technical Engineering Support	WR	SMDC : Huntsville, AL	0.000	0.000		0.565	Nov 2023	0.565	Nov 2023	-		0.565	0.000	1.130	-

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 1901 / MC Grnd Wpnry Prod Improvement
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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combat Optics: Travel	Various	Travel/GCPC/Ct : Quantico, VA	0.000	0.001	Jan 2022	0.080	Jan 2023	0.050	Jan 2024	-		0.050	0.000	0.131	-
Family of Infantry Weapons Systems	Various	Travel/GCPC/Ct : Quantico, VA	1.119	0.034	Jan 2022	0.215	Jan 2023	0.217	Jan 2024	-		0.217	Continuing	Continuing	Continuing
Family of Infantry Weapons Systems	WR	NSWC, Crane : Crane, IN	0.000	0.000		0.130	Jan 2023	0.135	Jan 2024	-		0.135	0.000	0.265	-
Proj 1901: Prior Years Cum Funding (Support)	Various	Various : Various	14.246	0.000		0.000		0.000		-		0.000	0.000	14.246	-
Subtotal			18.022	0.275		1.490		1.232		-		1.232	Continuing	Continuing	N/A

Remarks
No significant change.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	TBD	TBD-CBM : TBD	0.000	0.000		0.100	Jan 2023	0.100	Jan 2024	-		0.100	0.000	0.200	-
Developmental Test & Evaluation (DT&E)	MIPR	DLA-EOSF CO : Philadelphia, PA	1.078	0.199	Jan 2022	0.841	Apr 2023	0.200	Jan 2024	-		0.200	0.000	2.318	-
Developmental Test & Evaluation (DT&E)	MIPR	DLA-TA CO : Philadelphia, PA	0.000	0.203	May 2022	1.345	Mar 2023	0.000		-		0.000	0.000	1.548	-
Developmental Test & Evaluation (DT&E)	WR	NSWC Carderock-ST CO : Bethesda, MD	0.000	0.211	Jun 2022	0.000		0.000		-		0.000	0.000	0.211	-
Developmental Test & Evaluation (DT&E)	MIPR	ARDEC-FIWS : Picatinny, NJ	0.715	0.519	Jan 2022	2.375	Jan 2023	2.391	Jan 2024	-		2.391	0.000	6.000	-
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane-FIWS : Crane, IN	4.114	1.495	Dec 2021	0.620	Nov 2022	1.280	Dec 2023	-		1.280	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	DLA-FIWS : Philadelphia, PA	0.563	0.237	Mar 2022	0.100	Mar 2023	0.200	Mar 2024	-		0.200	0.000	1.100	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 7				PE 0206623M / MC Ground Cmbt Spt Arms Sys				1901 / MC Grnd Wpnry Prod Improvement							
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/FFP	MCSC-FIWS : Quantico, VA	0.357	0.603	Jan 2022	0.600	Jun 2023	0.606	Jun 2024	-		0.606	0.000	2.166	-
Developmental Test & Evaluation (DT&E)	C/FFP	DTIC-FIWS : Ft. Belvoir, VA	0.320	0.062	Apr 2022	0.100	Apr 2023	0.300	Apr 2024	-		0.300	0.000	0.782	-
Developmental Test & Evaluation (DT&E)	WR	NSWC Indian Head-FIWS : Indian Head, MD	0.308	0.339	Feb 2022	0.346	Feb 2023	0.349	Feb 2024	-		0.349	0.000	1.342	-
Developmental Test & Evaluation (DT&E)	Various	NHR - SAL CO : Naval Health Research	0.000	0.000		0.000		0.400	Jan 2024	-		0.400	0.000	0.400	-
Developmental Test & Evaluation (DT&E)	MIPR	NSWC - CO : Dahlgren, VA	0.000	0.000		0.383	Mar 2023	0.000		-		0.000	0.000	0.383	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	17.137	0.000		0.000		0.000		-		0.000	0.000	17.137	-
Subtotal			24.592	3.868		6.810		5.826		-		5.826	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Infantry Weapons Systems	C/FFP	MCSC : Quantico, VA	1.383	0.160	Mar 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Proj 1901: Prior Years Cum Funding (Mgmt Services)	Various	Various : Various	1.808	0.000		0.000		0.000		-		0.000	0.000	1.808	-
Subtotal			3.191	0.160		0.000		0.000		-		0.000	Continuing	Continuing	N/A
Project Cost Totals			69.854	7.215		8.435		10.543		-		10.543	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy							Date: March 2023			
Appropriation/Budget Activity 1319 / 7			R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys			Project (Number/Name) 1901 / MC Grnd Wpnry Prod Improvement				
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks
 An increase from FY 2023 to FY 2024 is primarily attributed to the initiation of Lightweight Medium Machine gun development, testing and evaluation, and assessment of technologies applicable to a squad aiming laser.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 1901 / MC Grnd Wpny Prod Improvement
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Proj 1901	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Combat Optics																												
Assess systems and technologies applicable to Squad Aiming Laser																												
EOSF system test, surveillance troubleshooting, maintenance																												
FIWS																												
Development, test and evaluation of Small Arms technology improvements test and enhancements																												
CBM																												
Development, evaluation and integration of mortar systems technology advancements																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 1901 / MC Grnd Wpny Prod Improvement

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1901				
Combat Optics: Assess systems and technologies applicable to Squad Aiming Laser: Schedule Detail	2	2024	4	2026
Combat Optics: EOSF system test, surveillance troubleshooting, maintenance: Schedule Detail	2	2022	1	2028
FIWS: Development, test and evaluation of Small Arms technology improvements test and enhancements: Schedule Detail	2	2023	4	2025
CBM: Development, evaluation and integration of mortar systems technology advancements: Schedule Detail	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2086 / Soldier/Marine Enhancement			
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
2086: <i>Soldier/Marine Enhancement</i>	41.987	0.957	1.483	2.357	-	2.357	2.293	2.171	2.209	2.253	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Marine Expeditionary Rifle Squad (MERS) mission is to manage the infantry squad, "squad as a system", by conducting human systems integration, systems engineering, human factors, and modernization efforts across all the products that are worn, carried, and consumed by the rifle squad and integration of the squad in mobility platforms. The Marine Corps's Force Design reorganizes personnel and equipment across all infantry battalions injecting new capabilities in order to combat a near peer competitor and includes experimentation with Fleet Marine Force units. Experimentation will require an increased level of effort to influence integration and synergy of capabilities. Physical integration, capability analysis, modeling and simulation, ergonomics, and usability assessments are facilitated by this program in working with the various program managers and project officers in the development of their unique items that contribute to the squads overall capabilities. MERS operates and manages the Gruntworks Squad Integration Facility in order to meet mission requirements to support integration and assessments of equipment. MERS is engaging industry and academia in search of innovative technologies that can meet Force Design infantry capabilities via a Partnership Intermediary Agreement. Weight, volume, and power management are fundamental considerations in the insertion or modernization of any squad equipment. MERS works with Joint and North Atlantic Treaty Organization (NATO) soldier modernization programs to harvest new technologies to increase the capability of the rifle squad. The program also ensures the integration of the rifle squad into the various mobility platforms currently in service and being developed to ensure a Marine and his equipment can operate effectively. This program is essential to ensure the combined synergistic equipment effects enhance the war-fighting functions of the Marine rifle squad towards the strategic Marine Corps warfighting vision for the future.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Marine Expeditionary Rifle Squad (MERS)	0.957	1.483	2.357	0.000	2.357
Articles:	-	-	-	-	-
FY 2023 Plans:					
- Continue to coordinate with Marine Corps Warfighting Lab and other stakeholders on execution of Force Design Infantry Battalion as experimentation continues to evolve.					
- Continue to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad.					
- Continue to conduct operational integration using designated Marines in order to assess near term and Force Design equipment integration in operational environments.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2086 / Soldier/Marine Enhancement

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Continue to utilize the Gruntworks Squad Integration Facility as an asset to execute innovation and technology searches, R&D integration projects, prototyping, human performance trials, rapid assessment of technologies, and usability trials. - Continue to conduct human performance trials utilizing Marine Corps Load Effects Assessment Program (MC-LEAP) and other data collection methodologies in order to develop mobility metrics to support Force Design. - Continue to conduct usability trials, requirements generation workshops, and limited user evaluations for digital interoperability, handheld devices and applications at the infantry platoon and squad level. - Continue to support integration of body armor, load bearing systems, and Integrated Helmet System with human factors and operational expertise. - Continue to conduct R&D on squad systems in conjunction with Army, Special Operations Command (SOCOM), and Close Combat Lethality Task Force in order to leverage new technologies and capabilities to the rifle squad to include Integrated Visual Augmentation System and Enhanced Night Vision Goggle Binocular. - Continue to conduct surveys with post deploying infantry battalions on usability and integration of equipment utilized during deployment. - Continue to conduct human performance testing of Marines utilizing current and prototype configurations of infantry rifle squad equipment. - Continue to seek weight and volume reduction replacements for current infantry equipment that support integration of components. Identify and analyze power solutions to support increased power demands of new capabilities within the rifle squad. - Continue to implement capability requirements from Force Design experimentation. - Continue the anthropometry survey of the Marine Corps. <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue to coordinate with Marine Corps Warfighting Lab and other stakeholders on execution of Force Design Infantry Battalion as experimentation continues to evolve. - Continue to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. - Continue to conduct operational integration using designated Marines in order to assess near term and Force Design equipment integration in operational environments. - Continue to utilize the Gruntworks Squad Integration Facility as an asset to execute innovation and technology searches, R&D integration projects, prototyping, human performance trials, rapid assessment of technologies, and usability trials. 					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2086 / Soldier/Marine Enhancement

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Continue to conduct human performance trials utilizing Marine Corps Load Effects Assessment Program (MC-LEAP) and other data collection methodologies in order to develop mobility metrics to support Force Design. - Continue to conduct usability trials, requirements generation workshops, and limited user evaluations for digital interoperability, handheld devices, and applications at the infantry platoon and squad level. - Continue to support integration of body armor, load bearing systems, and Integrated Helmet System with human factors and operational expertise. - Continue to conduct R&D on squad systems in conjunction with Army, Special Operations Command (SOCOM), and Close Combat Lethality Task Force in order to leverage new technologies and capabilities to the rifle squad to include Integrated Visual Augmentation System and Enhanced Night Vision Goggle Binocular. - Continue to conduct surveys with post deploying infantry battalions on usability and integration of equipment utilized during deployment. - Continue to conduct human performance testing of Marines utilizing current and prototype configurations of infantry rifle squad equipment. - Continue to seek weight and volume reduction replacements for current infantry equipment that support integration of components. Identify and analyze power solutions to support increased power demands of new capabilities within the rifle squad. - Continue to implement capability requirements from Force Design experimentation. - Continue the anthropometry survey of the Marine Corps. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Marine Enhancement increase from FY 2023 to FY 2024 is to enable the completion of the anthropometry study and support the increased work associated with Force Design.</p>					
Accomplishments/Planned Programs Subtotals	0.957	1.483	2.357	0.000	2.357

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2086 / Soldier/Marine Enhancement

D. Acquisition Strategy

Non Developmental Item/Commercial off the Shelf (NDI/COTS).

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2086 / Soldier/Marine Enhancement
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prior Years Cumulative Funding	Various	Marine Corps Systems Command : Quantico, VA	12.792	0.000		0.000		0.000		-		0.000	0.000	12.792	-
Subtotal			12.792	0.000		0.000		0.000		-		0.000	0.000	12.792	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MERS Support	Various	Marine Corps Systems Command : Quantico, VA	1.518	0.000	Nov 2021	0.000		0.000		-		0.000	0.000	1.518	-
MERS Technical Support	C/IDIQ	Various : Various	0.932	0.000	Nov 2021	0.000		0.043	May 2024	-		0.043	Continuing	Continuing	Continuing
MERS Technical Support - PIA	C/CPFF	MCSC : Quantico, VA	5.487	0.867	Jun 2022	0.275	Dec 2022	0.315	Jan 2024	-		0.315	0.000	6.944	Continuing
MERS Technical Support	C/CPFF	MCSC : Quantico, VA	0.867	0.000		0.000		0.000		-		0.000	0.000	0.867	-
Prior Years Cumulative Funding	Various	Various : Various	7.142	0.000		0.000		0.000		-		0.000	0.000	7.142	-
Subtotal			15.946	0.867		0.275		0.358		-		0.358	Continuing	Continuing	N/A

Remarks
Overall increase is primarily attributed to increased requirements due to Force Design and the continued anthropometry study.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	Various	MCSC : Quantico, VA	0.666	0.090	Nov 2021	1.208	Mar 2023	1.999	Mar 2024	-		1.999	0.000	3.963	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys					Project (Number/Name) 2086 / Soldier/Marine Enhancement				

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	12.583	0.000		0.000		0.000		-		0.000	0.000	12.583	-
Subtotal			13.249	0.090		1.208		1.999		-		1.999	0.000	16.546	N/A

Remarks
Overall increase from FY 2023 to FY 2024 is primarily attributed to the anthropometry study.

	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	41.987	0.957	1.483	2.357	-	2.357	Continuing	Continuing	N/A

Remarks

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2086 / Soldier/Marine Enhancement
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Proj 2086	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	MERS Research/Int of Infantry Squad																											
Marine Enhancement Prog Equipment																												
Empty grid for data entry																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2086 / Soldier/Marine Enhancement

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2086				
MERS research/integration of Infantry Squad - No major milestones	1	2022	4	2028
Marine Enhancement Program Equipment - No major milestones	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2112 / Lightweight 155mm Howitzer			
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
2112: <i>Lightweight 155mm Howitzer</i>	6.703	1.967	0.015	0.015	-	0.015	0.013	0.013	0.012	0.012	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

LW155 (also known as the M777A2 howitzer) provides all weather, day/night direct, reinforcing, and general support fires to maneuver forces as well as direct support artillery. It is a joint program between the Marine Corps and Army, which is additionally supporting various foreign military purchases of the weapon system. The M777A2 howitzer was first fielded by the Marine Corps in April 2005 and completed fielding in April 2013. The M777A2 howitzer is used significantly in support of Operation Inherent Resolve. This budget item supports system updates to maintain and increase performance and lethality. The M777A2 howitzer is the prominent weapon of the Marine indirect fires triad and currently the only cannon in the Service.

In FY 2024, the program will continue to focus on improving the Digital Fire Control System (DFCS) of the M777A2 while allowing for operation in a Global Positioning System (GPS) denied/ challenged environment. Continued operation in a GPS denied/ challenged environment is critical to the M777A2 ability to fire Precision Guided Munitions (PGM). The M777A2 will leverage the US Army's Assured Positioning, Navigation, and Timing (APNT) initiatives, such as Mounted APNT System (MAPS), as well as DFCS efforts by other US Army weapon system platforms, to help evaluate future modernization efforts for the M777A2.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Lightweight 155mm Howitzer Product Improvements	1.967	0.015	0.015	0.000	0.015
Articles:	-	-	-	-	-
FY 2023 Plans: -Program will continue to perform engineering studies to integrate the latest technologies for continued operation against peer threats.					
FY 2024 Base Plans: -Program will continue to perform engineering studies to integrate the latest technologies for continued operation against peer threats.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: No change.					
Accomplishments/Planned Programs Subtotals	1.967	0.015	0.015	0.000	0.015

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2112 / Lightweight 155mm Howitzer

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>			<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PMC/2185: 155MM Ltwl Towed Howitzer	37.510	1.782	0.489	-	0.489	1.823	0.511	1.893	1.931	0.000	1,458.746

Remarks

D. Acquisition Strategy

RDTE efforts in FY 2024 will leverage existing technologies to integrate and evaluate to inform future modernization efforts in terms of hardware and software upgrades for M777A2 howitzer. Future upgrades will be evaluated based on cost and impact to operation.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2112 / Lightweight 155mm Howitzer
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LW155 Product Improvements	MIPR	CCDC-AC : Picatinny Arsenal, NJ	6.700	1.967	Oct 2021	0.015	Oct 2022	0.015	Oct 2023	-		0.015	Continuing	Continuing	Continuing
Subtotal			6.700	1.967		0.015		0.015		-		0.015	Continuing	Continuing	N/A

Remarks
Program will continue to perform engineering studies to integrate the latest technologies for continued operation against peer threats.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	MIPR	Yuma Proving Ground : Yuma, AZ	0.003	0.000		0.000		0.000		-		0.000	0.000	0.003	-
Subtotal			0.003	0.000		0.000		0.000		-		0.000	0.000	0.003	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			6.703	1.967	0.015	0.015	-	0.015	Continuing	Continuing	N/A	

Remarks

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2112 / Lightweight 155mm Howitzer
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Proj 2112	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
	Evaluation																															
				Design Finalization ◆																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2112 / Lightweight 155mm Howitzer

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2112				
LW155 Modernization Research	1	2022	4	2028
CLE Redesign Completion	4	2022	4	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2237 / Amphibious Vehicle Test			
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
2237: Amphibious Vehicle Test	20.366	2.795	2.733	3.246	-	3.246	3.103	3.084	3.136	3.199	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Amphibious Vehicle Test Branch (AVTB) is a division of Marine Corps Tactical Systems Support Activity (MCTSSA) and is responsible for the operation and management of a vehicle test facility, which includes the Department of Defense's premier amphibious vehicle test competency, as well as maintains the ability to test the department's capabilities that operate in the littorals. The AVTB supports experimentation; develops test plans; executes test and evaluation; and provides analysis and reporting of developmental and integrated test and evaluation events. They support the development and performance validation of amphibious, expeditionary ground combat vehicles, and other capabilities that operate in the littoral. The AVTB conducts and supports testing for MCSC; Navy and other service PEOs and Program Management Offices; the Office of Naval Research; and HQMC PP&O and CD&I. The mission of the AVTB is to conduct test and evaluation of amphibious, expeditionary combat vehicle systems and capabilities that operate in the littoral in order to enable informed acquisition decisions.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Contracts and Test and Evaluation Support Assets	2.795	2.733	3.246	0.000	3.246
Articles:	-	-	-	-	-
FY 2023 Plans:					
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV):					
- Continuation of ACV-P follow on testing as required - System upgrades and platform modifications.					
- Continuation of ACV-C follow on testing as required - System upgrades and platform modifications.					
- ACV-30 testing for the Engineering and Manufacturing Development (EMD) phase. Plan and conduct Reliability Growth Testing (RGT).					
Assault Amphibious Vehicle (AAV) Family of Vehicles (FoV):					
- Continuation of AAVP7/C7/R & ECP follow on testing as required - System upgrades and platform modification.					
Advanced Reconnaissance Vehicle (ARV):					
- ARV testing for the Engineering and Manufacturing Development (EMD) phase - developmental and reliability testing of competitive vendors.					
FY 2024 Base Plans:					
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV):					
- Continuation of ACV-P follow on testing as required - System upgrades and platform modifications.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2237 / Amphibious Vehicle Test

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continuation of ACV-C follow on testing as required - System upgrades and platform modifications.</p> <p>- ACV-30 testing for the Engineering and Manufacturing Development (EMD) phase. Plan and conduct Reliability Growth Testing (RGT).</p> <p>- Continue testing for the ACV-R EMD phase. Plan and conduct RGT.</p> <p>Assault Amphibious Vehicle (AAV) Family of Vehicles (FoV):</p> <p>- Continuation of AAVP7/C7/R & ECP follow on testing as required - System upgrades and platform modification.</p> <p>Advanced Reconnaissance Vehicle (ARV):</p> <p>- Continuation of ARV testing for the Engineering and Manufacturing Development (EMD) phase - developmental and reliability testing of competitive vendors.</p> <p>Light Armor Reconnaissance Vehicle (LAV) Family of Vehicles (FoV):</p> <p>-Continuation of LAV FoV ECP follow-on testing as required - system upgrades and platform modifications.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The increase from FY 2023 to FY 2024 of \$0.513M reflects an inflation factor and increased cost of operation support.</p>					
Accomplishments/Planned Programs Subtotals	2.795	2.733	3.246	0.000	3.246

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

N/A

Remarks

D. Acquisition Strategy

The Amphibious Vehicle Test Branch supports the Department of Defense's amphibious and expeditionary combat vehicle systems developmental testing and evaluation through all stages of the acquisition life cycle. It is agile enough to conduct testing ranging from science and technology / research and development demonstrations (in order to determine program requirements and technological maturity) through verification and validation of post fielding engineering change proposals. AVTB sustainment and test support is conducted through a mix of military subject matter experts, federal civil service, support contracts, and local and supported service military personnel and equipment support requests.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2237 / Amphibious Vehicle Test
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prior Years Cumulative Funding	Various	Various : Various	2.430	0.000		0.000		0.000		-		0.000	0.000	2.430	-
Subtotal			2.430	0.000		0.000		0.000		-		0.000	0.000	2.430	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Facility/Test Infrastructure	C/FFP	NAVFAC, SW : Camp Pendleton, CA	1.159	0.216	Oct 2021	0.150	Oct 2022	0.173	Oct 2023	-		0.173	Continuing	Continuing	Continuing
Test Assets//Operator Spprt	C/FFP	MCTSSA Camp Pend : Camp Pendleton, CA	4.606	1.410	Apr 2022	1.232	Jan 2023	1.486	Jan 2024	-		1.486	0.000	8.734	-
Vehicle Support	WR	RCO Camp Pendleton : Camp Pendleton, CA	0.511	0.060	Oct 2021	0.060	Oct 2022	0.126	Oct 2023	-		0.126	Continuing	Continuing	Continuing
Hazmat POL PPE	Various	MCTSSA Camp Pendleton : Camp Pendleton, CA	0.506	0.025	Oct 2021	0.020	Oct 2022	0.042	Oct 2023	-		0.042	0.000	0.593	-
Crane Test Support	C/IDIQ	MCTSSA Camp Pendleton : Camp Pendleton, CA	0.270	0.000	Oct 2021	0.000		0.000		-		0.000	0.000	0.270	-
Test article fuel (J8)	Various	AVTB : Camp Pendleton, CA	1.034	0.062	Oct 2021	0.065	Oct 2022	0.164	Oct 2023	-		0.164	0.000	1.325	-
Test support Fuel (Diesel)	Various	AVTB : Camp Pendleton, CA	0.901	0.080	Oct 2021	0.020	Oct 2022	0.082	Oct 2023	-		0.082	0.000	1.083	-
Prior Years Cumulative Funding	Various	Various : Various	0.452	0.000		0.000		0.000		-		0.000	0.000	0.452	-
Subtotal			9.439	1.853		1.547		2.073		-		2.073	Continuing	Continuing	N/A

Remarks
The increase from FY 2023 to FY 2024 is primarily attributed to increased cost of operation support.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2237 / Amphibious Vehicle Test
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	Various	AVTB : Camp Pendleton, CA	1.929	0.120	Oct 2021	0.194	Feb 2023	0.130	Oct 2023	-		0.130	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	AVTB : MCTSSA Camp Pendleton	0.711	0.150	Oct 2021	0.200	Feb 2023	0.211	Oct 2023	-		0.211	0.000	1.272	-
Subtotal			2.640	0.270		0.394		0.341		-		0.341	Continuing	Continuing	N/A

Remarks
The decrease from FY 2023 to FY 2024 is primarily attributed to decreased requirement for test articles.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Data Mgmt & T&E Service Supt	C/FFP	MCTSSA Camp Pendleton : Camp Pendleton	3.048	0.310	Nov 2021	0.339	Nov 2022	0.621	Nov 2023	-		0.621	Continuing	Continuing	Continuing
Lab and Tech Writer Supt.	C/FFP	MCTSSA Camp Pendleton : Camp Pendleton	2.809	0.362	Nov 2021	0.453	Nov 2022	0.211	Nov 2023	-		0.211	0.000	3.835	-
Subtotal			5.857	0.672		0.792		0.832		-		0.832	Continuing	Continuing	N/A

Remarks
The increase from FY 2023 to FY 2024 reflects an increased cost of operation support.

	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		20.366	2.795	2.733	3.246	-	3.246	Continuing	Continuing	N/A

Remarks
Overall increase from FY 2023 to FY 2024 reflects an inflation factor and increased cost of operation support.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2237 / Amphibious Vehicle Test
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	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Proj 2237																												
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV)																												
	ACV-P Testing																											
	ACV-30 ECP & Test																											
	ACV-30 DT&E																											
Assault Amphibious Family of Vehicles (AAVP7/C7/R7)																												
	AAVP7/C7/R7																											
	Amphibious Surf																											
Advanced Reconnaissance Vehicle (ARV)																												
	ARV - OTA Competitive Prototype																											
					ARV-Prototype T&E				ARV - EMD reliability testing				ARV Reliability															
Light Armor Reconnaissance Vehicle (LAV) Family of Vehicles (FoV)																												
	LAV - LAV Reliability testing																											
Office of Naval Research (ONR) Projects																												
	Advanced Ground																											
	Unmanned Swarming																											
Other USMC																												
													USMC expeditionary combat															
													USMC & USN Ship Interdiction Sys.															
OPFOR Support																												
													OPFOR Support Testing															

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2237 / Amphibious Vehicle Test

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2237				
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV): ACV-P Reliability and follow on testing as required - System upgrades and platform modification.	1	2022	4	2026
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV): ACV-30 Prototype Water Mobility Assessment	4	2023	1	2025
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV): ACV-30 Testing - Water Mobility, Land Mobility, Reliability, follow on testing as required	4	2023	1	2025
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV): ACV-30 Reliability Growth Testing	4	2023	1	2025
Amphibious Combat Vehicle (ACV) Family of Vehicles (FoV): ACV- R Engineering Proposal Test	3	2024	2	2026
Assault Amphibious Family of Vehicles (AAVP7/C7/R7): AAVP7/C7/R & ECP testing as required - System upgrades and platform modification.	1	2022	4	2024
Assault Amphibious Family of Vehicles (AAVP7/C7/R7): Amphibious Surf Capability Vehicle - Water Mobility and Reliability Qualification Testing	1	2022	4	2024
Advanced Reconnaissance Vehicle (ARV): Other Transaction Authority or Competitive Prototyping Phase	4	2022	4	2024
Advanced Reconnaissance Vehicle (ARV): ARV Prototype testing and evaluation	1	2023	3	2023
Advanced Reconnaissance Vehicle (ARV): ARV testing for the Engineering and Manufacturing Development (EMD) reliability testing	4	2023	4	2024
Advanced Reconnaissance Vehicle (ARV): ARV Reliability and follow on testing as required - system upgrades and platform modifications.	1	2025	4	2026
Advanced Reconnaissance Vehicle (ARV): Light Armor Reconnaissance Vehicle (LAV) Family of Vehicles (FoV): Reliability and follow on testing as required - System upgrades and platform modification.	1	2022	4	2024

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2237 / Amphibious Vehicle Test
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Office of Naval Research (ONR) Projects: Advanced Ground and Amphibious Platform science and technology capabilities testing	1	2022	4	2023
Office of Naval Research (ONR) Projects: Unmanned Swarming Amphibious Assault Craft - Water Mobility.	1	2022	4	2024
Other USMC: Marine Corps expeditionary combat and tactical vehicles - System upgrades and platform modification.	1	2022	4	2028
Other USMC: Support to the Navy Marine Expeditionary Ship Interdiction System and Long Range Fires testing.	1	2022	4	2028
OPFOR Support: OPFOR Support Testing	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2315 / Training Devices/Simulators			
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
2315: <i>Training Devices/Simulators</i>	192.826	35.090	36.833	27.494	-	27.494	35.222	30.701	28.442	28.935	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The training devices and simulators in this project include: Combined Arms Command & Control Training Upgrade System (CACCTUS), Deployable Virtual Training Environment (DVTE), Force on Force Training Systems (FoFTS), Marine Air-Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements, Ranges and Training Area Management (RTAM) (Formerly Range Modernization/ Transformation), Supporting Arms Virtual Trainer (SAVT), Immersive Training Range Support (ITRS), Training Support and Training Simulation Support (TSS), Marine Corps Training Information Management System (MC-TIMS), Indoor Simulated Marksmanship Trainer (ISMT), and the Family of Egress Trainers (FET). These training systems provide tactical weapons and decision-making skill training for Marines entry level through MAGTF staff level. Systems will be interoperable and will allow for mission planning, mission rehearsal, and concept evaluation in a valid synthetic environment with objective and timely feedback. Through Live, Virtual, and Constructive Training Environment simulation (LVC-TE), the Marine Corps will have means to train jointly, educate, develop doctrine and tactics, formulate and assess operational plans, assess warfighting situations, and define operational requirements.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Combined Arms Command and Control Trainer Upgrade System (CACCTUS)	0.958	6.107	5.276	0.000	5.276
Articles:	-	-	-	-	-
Description: CACCTUS is a Combined Arms Command and Control (C2) Training System that enables comprehensive Marine Corps staff, unit, and team training both at home station Combined Arms Staff Training (CAST) facilities and through distributed training involving CAST facilities across the Marine Corps. CACCTUS is an upgrade to the USMC's CAST that provides fire support training for the Marine Air-Ground Task Force (MAGTF) elements up to and including the Marine Expeditionary Brigade (MEB) level. Using the system components and simulation capabilities, two dimensional (2D) and three dimensional (3D) visuals, interfaced Command, Control, Communications, Computers and Intelligence (C4I), synthetic terrain, and an After Action Review (AAR), the concept of operations for the CACCTUS system is to immerse the trainees in a realistic, scenario-driven environment to enable commands and their battle staffs to train or rehearse combined arms tactics, techniques, and procedures for decision-making processes. CACCTUS is a threshold requirement constituent system of Live Virtual Constructive-Training Environment (LVC-TE). CACCTUS will begin the initial steps of merging functional baselines and training capabilities with MTWS to achieve the goals of the Battle Staff Training System through MAGTF Warfare Simulation (MTWS) Modification to Re-engineer Key Improvements (MRKI), modification, and re-engineering of key infrastructure participation.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><i>FY 2023 Plans:</i></p> <ul style="list-style-type: none"> - Continue development to retain currency of training and readiness tasks and tactics, techniques, and procedures with combined arms effort. - Continue program office support of government and contactor labor and travel for related research, development, and test support for ground training systems - Continue interoperability activities with training systems that support the full range of military operations. - Continue development, test, integration & interoperability efforts to retain federate position within LVC-TE - Initiate test and integration efforts for Office of Naval Research transition programs and efforts with operational gear (C4I) - Initiate cyber related testing and system development to retain authority to operate/connected to new networks <p><i>FY 2024 Base Plans:</i></p> <ul style="list-style-type: none"> - Continue development to retain currency of training and readiness tasks and tactics, techniques, and procedures with combined arms effort. - Continue program office support of government and contactor labor and travel for related research, development, and test support for ground training systems - Continue interoperability activities with training systems that support the full range of military operations. - Continue development, test, integration & interoperability efforts to retain federate position within LVC-TE - Continue test and integration efforts for Office of Naval Research transition programs and efforts with operational gear (C4I) - Continue cyber related testing and system development to retain authority to operate/connected to new networks <p><i>FY 2024 OCO Plans:</i> N/A</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease due to reduced requirements for system development.</p>					
<p><i>Title:</i> Deployable Virtual Training Environment (DVTE)</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> DVTE is a laptop Personal Computer (PC) based simulation system capable of emulating organic and supporting infantry battalion weapons systems and other scenarios that facilitate readiness based training. It is a portable configuration that allows Marines to train in areas where there are few options for training in</p>	0.570	0.365	0.365	0.000	0.365
	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>garrison, for example: aboard ship, at remote reserve locations, or deployed. DVTE training includes language and culture training, platoon and squad level tactics, employment of supporting arms, and various Recognition of Combatants (ROC) packages. DVTE is part of a Commander's "training toolkit" contributing to the building block approach to standards based training that focuses on achieving an improved level of combat readiness.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue integration of technology products transitioned from the Office of Naval Research (ONR) - Continue program office support of government and contractor labor /travel for related research, development, and test support for ground training systems - Initiate interoperability activities with ground and air training systems - Initiate development, test, and integrate interoperability efforts to retain a federate within LVC-TE <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue integration of technology products transitioned from the ONR - Continue program office support of government and contractor labor /travel for related research, development, and test support for ground training systems - Continue interoperability activities with ground and air training systems - Continue development, test, and integrate interoperability efforts to retain a federate within LVC-TE - Initiate procurement of Lab assets hardware and software and perform the necessary integration and testing requirements. Design validation, analyzing the design limits of the product to better understand how it's likely to perform in the real world and provide feedback on any areas of potential design optimization before the final revision of the design gets produced. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: No change.</p>					
<p>Title: Force on Force Training Systems (FoFTS)</p> <p align="right">Articles:</p> <p>Description: Force on Force Training Systems (FoFTS) provides realistic, non-live fire capabilities to perform force on force training using personnel, combat vehicles, and weapons surrogate devices as part of a suite of tactical engagement capabilities that enhance training around the world and across the range of military operations. The program includes tactical training systems such as the Special Effects Small Arms Marking</p>	0.602	3.351	3.305	0.000	3.305
	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>System (SESAMS) and advanced, instrumented, laser-based tactical engagement systems such as the FoFTS-Next that provide realistic weapons effects, position locating, and enhanced After Action Review (AAR) capability to support Live-Virtual-Constructive (LVC) events in the MAGTF Training Program curriculum. This program is critical to enabling Marines to train in a realistic, force on force environment in lieu of live-fire training and allows for training against a peer and near peer threat in a more authentic, multisensory environment. This capability improves training realism through Force on Force training capabilities, and is a line of effort in the Marine Corps Range Training Area Management Campaign Plan, which was developed to address the specific challenges articulated in the Commandants Planning Guidance. To that end, the program's production and fielding of the FoFTS-Next Marine Corps Tactical Instrumentation System - Personnel (MCTIS-P), comprises a complete replacement and increased capability of the in-service I-TESS II system. Additionally, through integration of combat vehicle (MCTIS-V) and weapons surrogates (MCTIS-WS) capabilities, the FoFTS-Next program will field an entirely new realistic and immersive Force on Force training capability. Funding supports procurement of FoFTS-Next MCTIS-P, MCTIS-V, MCTIS-WS, and enhanced networking capability to provide a more robust and comprehensive AAR. The program is on schedule to achieve initial operational capability (IOC) by FY 2024 and FOC by FY 2026.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Initiate MCTIS-V development for the integration of the LAV and ACV combat vehicles into the FoFTS-Next system and training environment. - Complete development of the Mountain Top Base stations to support FoFTS-Next networking and connectivity enhancements. - Initiate development of the Weapons Surrogates (MCTIS-WS) for integration into the FoFTS-Next system and training environment. - Initiate and complete fire hazard analysis of Battery Storage and Charging containers. <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue development of the Weapons Surrogates (MCTIS-WS) for integration into the FoFTS-Next system and training environment. <p>FY 2024 OCO Plans:</p> <p>N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
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Decrease is a result of completion of MCTIS-V prototyping in FY 2023.

Title: Marine Air-Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements	9.240	3.995	4.262	0.000	4.262
Articles:	-	-	-	-	-

Description: The MAGTF Tactical Warfare Simulation (MTWS) is the Marine Corps's only constructive, aggregate-level simulation system used to support the training of Marine commanders and their battle staffs in MAGTF war-fighting principles, concepts, and associated command and control procedures. Using complex computer-simulated behavior models, MTWS provides an interactive, decision-based, real-time, war game representing the six war-fighting functional areas of fires, command and control, force protection, logistics, maneuver, and intelligence. Its modeling breadth and flexibility enables users to represent and exercise a wide variety of combat scenarios to prepare leaders to face the military challenges of today's world. MTWS is designed to support the training of commanders and their staffs in exercises involving live and simulated land, air, and naval forces at all operational command levels. The system supports all levels of command throughout the Marine Expeditionary Force (MEF) and Joint Task Force (JTF). MTWS can be used as a multi-sided war game, including red, blue, civilian, and non-aligned sides. The system can also be used to validate specific operational plans against a variety of enemy and environmental situations. Thus command personnel may examine alternative tactical solutions on a "what if" basis. MTWS is an objective requirement constituent system of LVC-TE and is undergoing a re-engineering effort via the MTWS Modification to Re-engineer Key Improvements (MRKI) program.

- FY 2023 Plans:**
- Continue JLVC Federation annual release.
 - Continue to develop new software capabilities to meet changing operational environment.
 - Continue to develop Joint Live, Virtual, and Constructive (JLVC) Federation capabilities.
 - Continue effort to re-engineer the MTWS software baseline.
 - Continue training system interoperability to include additional C4I devices.
 - Initiate program office support of government and contractor labor /travel for related research, development, and test support for ground training systems.
 - Initiate cyber related testing and system development to retain authority to operate/connected to current and new networks.
 - Continue development, testing, and integration efforts for system re- engineering effort (MRKI).
 - Initiate interoperability activities with training systems that support the full range of military operations.
 - Continue development, test, integration & interoperability efforts to retain a federate within LVC-TE and JLVC.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Initiate LVC-TE constituents development, test, and integration support.</p> <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue JLVC Federation annual release. - Continue to develop new software capabilities to meet changing operational environment. - Continue to develop Joint Live, Virtual and Constructive (JLVC) Federation capabilities. - Continue effort to re-engineer the MTWS software baseline. - Continue training system interoperability to include additional C4I devices. - Continue program office support of government and contractor labor /travel for related research, development, and test support for ground training systems. - Continue cyber related testing and system development to retain authority to operate/connected to current and new networks. - Continue development, testing, and integration efforts for system re- engineering effort (MRKI). - Continue interoperability activities with training systems that support the full range of military operations. - Continue development, test, integration & interoperability efforts to retain a federate within LVC-TE and JLVC - Continue LVC-TE constituents development, test, and integration support. - Initiate Battle Staff Training System (BSTS) development, test, and integration support. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase supports Battle Staff Training System (BSTS) development/test and integration support, emerging requirements for system interoperability development/test and LVC-TE integration.</p>					
<p>Title: Marine Corps Training Information Management System (MCTIMS)</p> <p align="right">Articles:</p> <p>Description: Marine Corps Training Information Management System (MCTIMS) is the enterprise training system for the Marine Corps. The unit training modules allows the Total Force to meet their requirement to record, track, and report training. MCTIMS maintains training and readiness manuals, curricula, MOS manuals/ road maps, course schedules, and seat allocations. In addition, MCTIMS is used to input and track student registrations, test scores, class standings, and course completions. The training resource module gives small unit leaders access to curriculum materials to support training.</p> <p>FY 2023 Plans:</p>	3.586	3.648	0.000	0.000	0.000
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue development of the MCTIMS modernization effort. This effort involves the design, development, and implementation of an optimal system, developed and hosted in the Cloud, and will focus on high priority and functional system requirements.</p> <p>FY 2024 Base Plans: N/A</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to schedule change in support of operational sustainment.</p>					
<p>Title: Ranges and Training Area Management (RTAM)</p> <p align="right">Articles:</p> <p>Description: Ranges and Training Area Management (RTAM) developments are associated with modernizing live training ranges at major USMC bases and stations. This development effort enhances After Action Review (AAR) with ground truth feedback, realistic representation of Opposing Forces (OPFOR), and will upgrade the range and exercise control capabilities. RTAM integrates Live, Virtual, and Constructive training technologies, thereby, enhancing fielded live-fire, force-on-target, and force-on-force training capabilities.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Initiate development of Targetry Range Automated Control and Recording II (TRACR II) software for Friend-and-Foe target control and scenario development, to include integration with Range Instrumentation System Controller (RISCon-T). - Continue Electronic Warfare Instrumented Ranges development with devices that can be activated to deny, degrade, and disrupt electromagnetic spectrum operations as the unit undergoing training operates within the area. - Continue developmental enhancements of Targetry Range Automated Control and Recording (TRACR) software for Friend-and-Foe target control and scenario development, to include integration with Range Instrumentation System Controller (RISCon-T). - Complete Ballistic Concrete testing and development for waste characterization, patch mix and field testing. - Travel to support evaluation and testing. <p>FY 2024 Base Plans:</p>	3.316	4.828	3.747	0.000	3.747
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Initiate evaluation and development of Known Distance Automated Scoring (KDAS) system. - Continue developmental enhancements of Targetry Range Automated Control and Recording (TRACR) software for Friend-and-Foe target control and scenario development, to include integration with Range Instrumentation System Controller (RISCon-T). - Continue development of Targetry Range Automated Control and Recording II (TRACR II) software for Friend-and-Foe target control and scenario development, to include integration with Range Instrumentation System Controller (RISCon-T). - Continue Electronic Warfare Ground Instrumented Ranges development with devices that can be activated to deny, degrade, and disrupt electromagnetic spectrum operations as the unit undergoing training operates within the area. - Initiate development of Live Fire Evaluation Tool (LFET) that increases shooters recognition, decision making and battlefield skill proficiency. - Travel to support evaluation and testing. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to completion of the Ballistic Concrete testing and development.</p>					
<p>Title: Supporting Arms Virtual Trainer (SAVT)</p> <p align="right">Articles:</p> <p>Description: Supporting Arms Virtual Trainer (SAVT) advances the training capability, operational readiness, and tactical proficiency of USMC Joint Terminal Attack Controllers (JTACS), Joint Fires Observers (JFOs), Forward Observers (FOs), and Forward Air Controllers (FACs). Personnel will use training scenarios that require the placement of simulated tactical ordnance on selected targets using Joint Close Air Support (JCAS) procedures and observed fire procedures for Naval Surface Fire Support (NSFS), artillery and mortar fire to perform destruction, neutralization, suppression, illumination/coordinated illumination, interdiction and harassment fire missions.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Initiate Server Virtualization for the FO, FAC, Instructor, IOS, JSAF, and IG Computer Hardware to reduce required Hardware footprint and optimize system performance while using Thin Clients. 	2.911	1.580	0.740	0.000	0.740
	-	-	-	-	-

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Initiate cyber related testing and system development to retain authority to operate/connected to current and new networks - Initiate test and integration efforts with operational gear Command, Control, Communications, Computers, and Intelligence (C4I) - Initiate interoperability activities with ground and air training systems - Continue development, test, integration, and interoperability efforts to support a federate within LVC-TE - Initiate Analysis of Alternatives (AOA) and begin development and integration of SAVT increment 2 solution(s) to Supporting Arms Training System (SATS) - Continue to provide Engineering and Project Management support <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue Server Virtualization for the FO, FAC, Instructor, IOS, JSAF, and IG Computer Hardware to reduce required Hardware footprint and optimize system performance while using Thin Clients. - Continue cyber related testing and system development to retain authority to operate/connected to current and new networks - Continue test and integration efforts with operational gear (C4I) - Continue interoperability activities with ground and air training systems - Continue development, test, integration, and interoperability efforts to support a federate within LVC-TE - Continue Analysis of Alternatives (AOA) and begin development and integration of SAVT increment 2 solution(s) to Supporting Arms Training System (SATS) - Continue to provide Engineering and Project Management support <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to reduced level of effort related to development and integration of the SAVT solution to SATS.</p>					
<p>Title: Immersive Training Range Support (ITRS)</p> <p align="right">Articles:</p>	2.078	2.114	2.155	0.000	2.155
<p>Description: Provide and sustains innovative technologies and programs that enhance the effectiveness of training and education at home stations. Innovative technologies incorporate high-fidelity training environments with enhanced battlefield realism including exposure to operational complexities and mental and physical stressors that challenge tactical, moral, and ethical decision making. Develops small unit leader decision making</p>	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
and hone small unit collective skills in realistic, replicative, and rapidly repeatable venues. Ensures Marines first encounter their tactical and ethical dilemmas in a simulated battlefield rather than actual combat.					
<p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue Computer-generated Forces (CGF) Other Transaction Authority (OTA) prototype for available enhanced instrumentation for immersive training capabilities that directly support the Infantry T&R. - Continue Mobile Immersive Training Environment (MITE) development to bring immersive training capabilities to units in support of peer-near-peer training. <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue CGF OTA prototype for available enhanced instrumentation for immersive training capabilities that directly support the Infantry T&R. - Continue MITE development to bring immersive training capabilities to units in support of peer-near-peer training. <p>FY 2024 OCO Plans:</p> <p>N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase is due to inflation.</p>					
<p>Title: Training Simulation Support (TSS)</p> <p align="right">Articles:</p> <p>Description: Training Simulation Support (TSS) provides greater combat readiness and enhanced operational execution to support a training continuum that features planning, preparation, exercise, and assessment capabilities for the Marine Air Ground Task Force (MAGTF) commander in both Joint and Service venues. TSS replicates a Contemporary Operational Environment (COE) and allows units to interact as though they are physically located in the same Operational Environment (OE). It also enables interoperability between diverse training programs to meet warfighting requirements and supports standards-based training from small unit events to large unit exercises. TSS supports continued constituent integration efforts into the Live, Virtual, and Constructive Training Environment (LVC-TE). LVC-TE is the tool that provides a persistent/consistent common operational training environment by which units can work together as though they are physically located in the same operational space with legacy and emerging training systems. TSS supports the LVC-TE timeline to deliver minimum viable product between the 1st and 2nd Quarter of FY 2023. Additional minimum viable capability releases are scheduled for every 6 months thereafter. This software intensive product is using the new</p>	11.829	8.939	7.644	0.000	7.644
	-	-	-	-	-

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Software Acquisition Pathway (DODI 5000.87), a transformational process that champions agile methods and fleet involvement to deliver what is most important to the fleet first.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue development of Live, Virtual, Constructive functionality among constituents to include front end analysis for constituent and enterprise services. - Continue development of enterprise services to include Cross Domain Solution (CDS), Exercise Design Tool (EDT), and After Action Review (AAR) solution. - Continue transition of ONR products into the enterprise services - Continue development of additional integration gateways and testing - Initiate program office support of government and contractor labor /travel for related research, development, and test support for ground training systems - Initiate cyber related testing and system development to retain authority to operate/connected to current and new networks - Initiate test and integration efforts with operational gear (C4I) - Initiate interoperability activities including gateway development with ground and air training systems - Initiate planning/development of Leader Focus Decision Game (LFDG) <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue development of Live, Virtual, Constructive functionality among constituents to include front end analysis for constituent and enterprise services. - Continue development of enterprise services to include Cross Domain Solution (CDS), Exercise Control Tool (ECT), Exercise Design Tool (EDT), After Action Review (AAR) solution, Data Repository, and Simulation Infrastructure Translation Services (SITS). - Continue transition of Office of ONR products into the enterprise services - Continue development of additional integration gateways and testing - Continue program office support of government and contractor labor /travel for related research, development, and test support for ground training systems - Continue cyber related testing and system development to retain authority to operate/connected to current and new networks - Continue test and integration efforts with operational gear (C4I) - Continue interoperability activities including gateway development with ground and air training systems - Complete planning/development of Leader Focus Decision Game (LFDG) 					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Initiate planning and development for Project Tripoli - Initiate development, testing, and prototyping of new and emerging technologies that support LVC training - Initiate Front End Analysis for emerging requirements <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to programmatic rephase to better align with the schedule.</p>					
<p>Title: Indoor Simulated Marksmanship Trainer (ISMT)</p> <p align="right">Articles:</p> <p>Description: Indoor Simulated Marksmanship Trainer (ISMT) provides basic and advanced marksmanship, shoot/no-shoot judgment scenarios, combat marksmanship, and weapons employment tactics. The ISMT provides infantry squad members with the ability to gain proficiency in multiple weapon platforms. Force Design 2030 will ensure small units, especially infantry squads, are led by the most well-trained and capable infantry Marines. The ISMT provides infantry squad members with the ability to gain proficiency in multiple weapon platforms while simulating live weapons training without the expenditure of expensive live ammunition. The system has five (5) firing positions and is capable of operating simulated weapons such as: rifles, pistols, machine guns, shotguns, mortars, and anti-tank weapons. ISMT also provides multiple courses of fire to include the Annual Rifle Qualification (ARQ) which is used to score Marines proficiency with service rifles. ISMT provides direct impact on the lethality of our infantry units.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Initiate and complete development of ISMT Ballistic Testing and Data Capture. Efforts will baseline simulated courses of fire against live fire events. Feedback will shape improved ballistics and performance of trainers - Initiate and complete development of ISMT new weapons concurrency. Efforts will provide new training anti-tank capabilities and more efficient electric weapons in place of compressed air models <p>FY 2024 Base Plans: N/A</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	0.000	0.977	0.000	0.000	0.000
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Decrease is due to completion of ballistic testing, data capture, and new weapons development.					
Title: Family of Egress Trainers (FET)	0.000	0.929	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Family of Egress Trainers (FET) is comprised of the Underwater Egress Training (UET) and the Dry Rollover Egress Training (DRET). The UET consists of the Modular Amphibious Egress Trainer (MAET) a modular training device designed to train Marines to egress a downed aircraft; the Submerged Vehicle Egress Trainer (SVET) designed to train egress from ground tactical vehicles; and the Shallow Water Egress Trainer (SWET) which is a procedural trainer used prior to SVET and MAET. The trainers and associated training programs are conducted by contractors. The program is directed toward non-air crew passengers aboard these vehicles. The DRET is comprised of the HMMWV Egress Trainer (HEAT), the MRAP Egress Trainer (MET), and the JLTV Egress Trainer (JET). All of these devices have the ability to train egress principles that can be applied to increase survivability during a catastrophic event. This type of training can only be conducted by the use of these systems.					
FY 2023 Plans: - Initiate and complete design of the Multi Use Egress Trainer (MUET) trainer.					
FY 2024 Base Plans: N/A					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to completion of MUET design.					
Accomplishments/Planned Programs Subtotals	35.090	36.833	27.494	0.000	27.494

C. Other Program Funding Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• PMC/6532-01: Training Devices, CACCTUS	1.754	0.000	0.000	-	0.000	6.553	0.924	0.943	0.962	Continuing	Continuing
• PMC/6532-02: Training Devices, DVTE	0.700	1.791	1.630	-	1.630	1.966	0.721	0.735	0.750	Continuing	Continuing

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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
• PMC/6532-03: <i>Training Devices, FoFTS</i>	0.000	36.128	44.982	-	44.982	33.286	9.821	9.968	10.237	Continuing	Continuing
• PMC/6532-04: <i>Training Devices, MTWS</i>	0.117	0.000	2.245	-	2.245	0.597	0.127	0.129	0.132	Continuing	Continuing
• PMC/6532-05: <i>Training Devices, RTAM</i>	4.340	14.661	27.209	-	27.209	36.534	31.389	32.456	34.815	Continuing	Continuing
• PMC/6532-06: <i>Training Devices, TSS</i>	6.067	13.248	0.000	-	0.000	0.000	0.884	1.036	1.040	Continuing	Continuing
• PMC/6532-07: <i>Training Devices, FET</i>	0.000	0.000	13.888	-	13.888	6.961	6.703	7.055	3.782	Continuing	Continuing
• PMC/6532-08: <i>Training Devices, ITRS</i>	0.000	1.535	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.535
• PMC/6532-09: <i>Training Devices, ISMT</i>	2.906	0.000	6.216	-	6.216	7.003	10.641	7.286	7.432	Continuing	Continuing
• PMC/6532-10: <i>Training Devices, SAVT</i>	0.000	0.000	0.000	-	0.000	6.774	10.586	6.899	7.037	Continuing	Continuing

Remarks

D. Acquisition Strategy

CACCTUS - Developing tasking orders on electronics and communication services for system development, test, and integration efforts. IDIQ will be used for contractor and reimbursable work requests for Navy Program Support labor.

DVTE - Developing tasking orders on electronics and communication services for system development, test, and integration efforts. IDIQ will be used for contractor and reimbursable work requests for Navy Program Support labor.

FoFTS - The FoFTS-Next program successfully awarded the anticipated Unfinitized Contract Action (UCA) on 17 June 2021 for production of the FoFTS-Next MCTIS-P and MCTIS-V base kits. The contract was subsequently definitized on 9 March 2022. Full MCTIS-V and MCTIS-WS RDT&E projects will be pursued via prototype OTAs. Upon successful completion of those prototype efforts, the successful prototyped items will be procured separately on either a production OTA or another FAR based type of contract vehicle.

MTWS - Developing Tasking orders on ECS for System Development/test and integration efforts. Using MIPR to Hill AFB for labor supporting modernization efforts. Using IDIQ for Contractor and Reimbursable work request for Navy Program Support labor.

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<p>RTAM - MIPR to the Army-PEO STRI planned for award on existing Consolidated Product-line Management Contract.</p> <p>SAVT - Developing Tasking orders on ECS for System Development/test and integration efforts.</p> <p>ITRS - MIPR to the ACC-Orlando planned for award on existing Consolidated Product-line Management Contract. MIPR to ACC-Orlando planned for OTA award to CGF. AK47 and RPK Blank Fire Only (BFO) weapon development by NSWC Crane. AK47 and RPK BFO weapon validation and testing by Corona.</p> <p>TSS - MIPR to the Army-PEO STRI planned for award on existing Consolidated Product-line Management Contract to start the development effort for LVC-TE functionality including constituent integration efforts. Using IDIQ for Contractor Labor and Reimbursable work request for Navy Program Support labor. Hardware will be procured competitively. Planned for award and support on the LVC enterprise product line management and software development.</p> <p>MCTIMS - Modernization efforts to utilize reimbursable work request(s) to NIWC Atlantic planned for both Navy and contractor support.</p> <p>ISMT - Pursuing the Advanced Small Arms Lethality Trainer (ASALT) which will provide advanced marksmanship training and alignment to Force Design 2030. Weapons concurrency and technology refresh of all software and hardware are planned for upcoming fiscal years. Newly fielded tactical systems like M3A1 Multi-Role Anti-Armor Anti-Personnel Weapons System (MAAWS) will be simulated on ISMT. System upgrades and new capabilities will be pursued via prototype OTAs. Upon successful completion of those prototype efforts, items will be procured separately on either a production OTA or another FAR based type of contract vehicle. RDT&E are centered on human performance data capture and improved simulator ballistics. Future integration requirements will align ISMT capabilities with LVC-TE training goals.</p> <p>FET - The acquisition strategy is designated for the design and test of the next generation of Submerged Vehicle Egress Trainer (SVET) and the Multi-Use Egress Trainer (MUET).</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2315 / Training Devices/Simulators							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CACCTUS - Development/Integration/Interoperability	C/CPFF	Eng. and Comp. Sim : Orlando, FL	0.000	0.610	Apr 2022	4.720	Jun 2023	3.776	Feb 2024	-		3.776	0.000	9.106	-
CACCTUS - SW Dev	MIPR	CERDEC : Ft. Belvoir	0.200	0.000		0.000		0.000		-		0.000	0.000	0.200	-
DVTE - Development/Integration/Interoperability	Various	Various : Various	0.000	0.438	Aug 2022	0.215	Apr 2023	0.215	Feb 2024	-		0.215	0.000	0.868	-
DVTE - SW Dev - VBS	SS/IDIQ	Bohemia Interactive : Orlando, FL	17.619	0.000		0.000		0.000		-		0.000	0.000	17.619	-
FoFTS Mountain Top Base Station Dev	WR	NSWC Corona : NSWC Corona	0.044	0.000		0.000		0.000		-		0.000	0.000	0.044	-
FoFTS Software Development	MIPR	ACC-Orlando : Orlando, FL	2.926	0.000		0.000		0.000		-		0.000	0.000	2.926	-
FoFTS Laser Compliance Testing	MIPR	NIWC-Atlantic : TBD	0.000	0.145	Aug 2022	0.000		0.000		-		0.000	0.000	0.145	-
FoFTS MCTIS-WS Development	Various	MCSC : TBD	0.000	0.114	Feb 2023	0.177	May 2023	3.290	Feb 2024	-		3.290	0.000	3.581	-
FoFTS OTA Capability Demonstration	Various	MCSC : TBD	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	-
FoFTS TREX Surrogate Weapons	PO	MCSC : Quantico, VA	1.971	0.000		0.000		0.000		-		0.000	0.000	1.971	-
FoFTS - ITRS AK47 BFO	C/BA	NSWC Crane : Crane, IN	0.391	0.000		0.000		0.000		-		0.000	0.000	0.391	-
FoFTS OTA Phase III	Various	MCSC : Quantico, VA	1.160	0.000		0.000		0.000		-		0.000	0.000	1.160	-
FoFTS MCTIS-V Development	Various	MCSC : Quantico, VA	0.284	0.054	Dec 2022	3.152	Mar 2023	0.000		-		0.000	0.000	3.490	-
FoFTS Human Factors Prototype	TBD	MCSC : Quantico, VA	0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	-
MTWS - Reengineering	MIPR	Hill AFB : Utah	8.362	7.932	Jan 2022	3.145	Mar 2023	3.500	Jan 2024	-		3.500	Continuing	Continuing	Continuing
MTWS - Development/Integration/Interoperability	C/CPFF	Envision Innovative Solution : Orlando, FL	0.000	1.172	Apr 2022	0.700	Apr 2023	0.549	Apr 2024	-		0.549	0.000	2.421	-

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MTWS - SW Dev 1	C/IDIQ	Cole Engineering, Inc. : Orlando, FL	10.867	0.000		0.000		0.000		-		0.000	0.000	10.867	-
MTWS - SW Dev 2	C/IDIQ	Cole Engineering, Inc. : Orlando, FL	1.002	0.000		0.000		0.000		-		0.000	0.000	1.002	-
MCTIMS	WR	NIWC-LANT : Charleston, SC	0.000	3.586	Aug 2022	3.648	Apr 2023	0.000		-		0.000	0.000	7.234	-
RTAM RISCon-T/PDSS SW/TRACR II Dev	MIPR	ACC-Orlando : Orlando, FL	11.217	0.345	Sep 2022	0.877	Jun 2023	1.064	May 2024	-		1.064	Continuing	Continuing	Continuing
RTAM LFET	C/FFP	NSWC Dahlgren : Dahlgren, VA	0.207	0.000		0.000		1.100	Jun 2024	-		1.100	0.000	1.307	-
RTAM Electronic Warfare	TBD	NSWC Dahlgren : Dahlgren, VA	0.000	2.100	May 2022	3.804	Mar 2023	0.400	Jun 2024	-		0.400	0.000	6.304	-
RTAM KDAS efforts	SS/FFP	ACC-Orlando : Orlando, FL	0.651	0.000		0.000		0.724	Mar 2024	-		0.724	0.000	1.375	-
RTAM KDAS Target System	SS/FFP	DLA : Philadelphia, PA	0.605	0.000		0.000		0.000		-		0.000	0.000	0.605	-
RTAM KDAS GCPC	Various	Various : Various	0.009	0.000		0.000		0.000		-		0.000	0.000	0.009	-
SAVT - Development/Integration/Interoperability	Various	Various : Various	0.000	2.911	Feb 2022	1.580	Feb 2023	0.740	Feb 2024	-		0.740	0.000	5.231	-
SAVT - Tech Insertion	C/FFP	Riptide Software, Inc. : Orlando, FL	5.846	0.000		0.000		0.000		-		0.000	0.000	5.846	-
ITRS Computer Generated Forces	MIPR	ACC-Orlando : Orlando, FL	0.766	0.382	Sep 2022	1.052	May 2023	0.791	May 2024	-		0.791	0.000	2.991	-
ITRS - CPM MITE	MIPR	ACC-Orlando : Orlando, FL	9.402	1.046	Jun 2022	1.062	Mar 2023	1.084	Mar 2024	-		1.084	Continuing	Continuing	Continuing
Training Simulation Support	C/CPFF	General Dynamics : Orlando, FL	0.000	9.932	Apr 2022	0.000		0.000		-		0.000	0.000	9.932	-
Training Simulation Support	MIPR	Various : Orlando, FL	0.157	0.645	Jun 2022	6.680	Mar 2023	6.721	Dec 2023	-		6.721	0.000	14.203	-
ISMT Ballistics Testing and Data Capture	MIPR	ONR : San Diego, CA	0.000	0.000		0.639	Apr 2023	0.000		-		0.000	0.000	0.639	-
FET MUET Trainer ACV	TBD	TBD : TBD	0.000	0.000		0.929	Sep 2023	0.000		-		0.000	0.000	0.929	-

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Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys					Project (Number/Name) 2315 / Training Devices/Simulators				

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
Prior Year Cumulative Funding	Various	Various : Various	91.239	0.000		0.000		0.000		-		0.000	0.000	91.239	-	
ISMT Weapons Development SIM	MIPR	NSWC TSD : Orlando, FL	0.000	0.000		0.308	Apr 2023	0.000		-		0.000	0.000	0.308	-	
Subtotal			165.195	31.412		32.688		23.954		-		23.954	Continuing	Continuing	N/A	

Remarks
Overall is primarily attributed to completion of ISMT ballistic testing and data capture, FET SVET design, and RTAM Ballistic Concrete testing.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
FoFTS Delta PDSC Support	C/FFP	MCSC TRASYS : Orlando, FL	0.000	0.208	Jan 2022	0.000		0.000		-		0.000	0.000	0.208	-	
FoFTS Fire Supp. Eng. Support	C/BA	DLA : Philadelphia, PA	0.000	0.043	Jan 2023	0.000		0.000		-		0.000	0.000	0.043	-	
CACCTUS/LVCTE Prototype Integration	MIPR	PEO STRI : Orlando, FL	0.499	0.000		0.000		0.000		-		0.000	0.000	0.499	-	
CACCTUS/LVCTE Pre Development	MIPR	PEO STRI : Orlando, FL	1.662	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing	
ITRS Corona Spt	WR	NSWC Corona : Corona, CA	0.671	0.247	Nov 2021	0.000		0.260	Oct 2023	-		0.260	0.000	1.178	-	
ITRS ISS Front End Analysis	WR	NSWC PCD : Panama City, FL	0.034	0.000		0.000		0.000		-		0.000	0.000	0.034	-	
ITRS PDSC	C/FFP	MCSC TRASYS : Orlando, FL	0.000	0.156	Jan 2022	0.000		0.000		-		0.000	0.000	0.156	-	
TSS LVC-TE Front End Analysis	TBD	TBD : TBD	0.000	0.000		0.000	Apr 2023	0.000		-		0.000	0.000	0.000	-	
RTAM Corona Spt	WR	NSWC Corona : Corona, CA	0.634	0.491	Oct 2021	0.000		0.214	Oct 2023	-		0.214	0.000	1.339	-	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys					Project (Number/Name) 2315 / Training Devices/Simulators				

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RTAM NSLC Spt	WR	NAVSEALOGCEN : Mechanicsburg, PA	0.034	0.000		0.000		0.000		-		0.000	0.000	0.034	-
RTAM LFET	WR	NSWC Dahlgren : Dahlgren, VA	0.231	0.000		0.000		0.195	Mar 2024	-		0.195	0.000	0.426	-
RTAM KDAS Navy support	WR	NSWC Crane : Crane, IN	0.224	0.000		0.000		0.000		-		0.000	0.000	0.224	-
RTAM NAWC-TSD Support	WR	NAWC-TSD : Orlando, FL	0.101	0.000		0.000		0.000		-		0.000	0.000	0.101	-
RTAM Electronic Warfare	WR	NSWC Dahlgren : Dahlgren, VA	0.568	0.115	Mar 2022	0.000		0.000		-		0.000	0.000	0.683	-
RTAM PDSC	C/FFP	MCSC TRASYS : Orlando, FL	0.000	0.155	Jan 2022	0.000		0.000		-		0.000	0.000	0.155	-
SAVT Risk Managemnt Framework (RMF)	TBD	NSWC Corona : Corona, CA	0.098	0.000		0.000		0.000		-		0.000	0.000	0.098	-
Prior Year Cumulative Funding	Various	Various : Various	16.866	0.000		0.000		0.000		-		0.000	0.000	16.866	-
ISMT Prototype Support	MIPR	NSWC TSD : Orlando, FL	0.000	0.000		0.030	Apr 2023	0.000		-		0.000	0.000	0.030	-
Subtotal			21.622	1.415		0.030		0.669		-		0.669	Continuing	Continuing	N/A

Remarks
Overall decrease is primarily attributed to completion of RTAM Ballistic Concrete testing.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Test & Evaluation (OT&E)	PO	NSWC Corona : Corona, CA	0.925	0.000	Jan 2022	0.000		0.000		-		0.000	0.000	0.925	-
Developmental Test & Evaluation (DT&E)	MIPR	ACC Orando : Orlando, FL	0.149	0.000		0.000		0.000	May 2024	-		0.000	0.000	0.149	-

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/FFP	RipTide : Orlando, FL	0.041	0.000		0.000		0.000		-		0.000	0.000	0.041	-
Operational Test & Evaluation (OT&E)	MIPR	ITRS RPK BFO NSWC Crane : Crane, IN	0.000	0.242	Apr 2022	0.000		0.000		-		0.000	0.000	0.242	-
Developmental Test & Evaluation (DT&E)	MIPR	RTAM SACON - ATC : Aberdeen, MD	0.510	0.000		0.000		0.000		-		0.000	0.000	0.510	-
Operational Test & Evaluation (OT&E)	MIPR	RTAM LFTS ATO V&V - NSWC Corona : Corona, CA	0.000	0.000		0.097	Jan 2023	0.000		-		0.000	0.000	0.097	-
Operational Test & Evaluation (OT&E)	WR	FOFTS LASER EVAL - NSWC Dahlgren : Dahlgren, VA	0.038	0.000		0.000		0.000		-		0.000	0.000	0.038	-
Operational Test & Evaluation (OT&E)	WR	FOFTS AMITS - NSWC Dahlgren : Dahlgren, VA	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
Operational Test & Evaluation (OT&E)	MIPR	FOFTS NSWC Dahlgren : Dahlgren, VA	0.000	0.024	Feb 2023	0.000		0.000		-		0.000	0.000	0.024	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	PO	NSWC Corona : Corona, CA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
Operational Test & Evaluation (OT&E)	MIPR	ACC Orando : Orlando, FL	0.000	0.000		0.000	Dec 2022	0.000		-		0.000	0.000	0.000	-
Operational Test & Evaluation (OT&E)	Various	Various : Various	0.002	0.000		0.000		0.000		-		0.000	0.000	0.002	-
Subtotal			1.790	0.266		0.097		0.000		-		0.000	0.000	2.153	N/A

Remarks
Overall decrease is due to decreased testing requirements related to TSS Interoperability with LVC functionality.

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

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Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CACCTUS - Program Support	Various	Various : Various	2.001	0.348	Oct 2021	1.387	Oct 2022	1.500	Oct 2023	-		1.500	0.000	5.236	-
DVTE - Program Support	Various	Various : Various	0.756	0.132	Oct 2021	0.150	Apr 2023	0.150	Oct 2023	-		0.150	0.000	1.188	-
FoFTS - Travel	Various	DTS : Various	0.002	0.014	Sep 2022	0.022	Dec 2022	0.015	Oct 2023	-		0.015	0.000	0.053	-
MTWS - Program Support	Various	Various : Various	0.582	0.136	Oct 2021	0.150	Oct 2022	0.213	Oct 2023	-		0.213	0.000	1.081	-
RTAM - Travel	Various	DTS : Various	0.027	0.110	Oct 2021	0.050	Oct 2022	0.050	Oct 2023	-		0.050	0.000	0.237	-
RTAM Program Support	TBD	TBD : TBD	0.189	0.000		0.000		0.000		-		0.000	0.000	0.189	-
RTAM KDAS Travel	Various	DTS : Various	0.014	0.000		0.000		0.000		-		0.000	0.000	0.014	-
ITRS - Travel	Various	DTS : Various	0.170	0.005	Sep 2022	0.000	Sep 2023	0.020	Sep 2024	-		0.020	0.000	0.195	-
ITRS - Program Support	C/BA	MCSC : Orlando, FL	0.102	0.000		0.000		0.000		-		0.000	0.000	0.102	-
TSS/LVCTE - Program Support	Various	Various : Various	0.150	1.252	Oct 2021	2.259	Oct 2022	0.923	Oct 2023	-		0.923	0.000	4.584	-
SAVT - Program Support	TBD	TBD : TBD	0.087	0.000		0.000		0.000		-		0.000	0.000	0.087	-
Prior Year Cumulative Funding	Various	Various : Various	0.139	0.000		0.000		0.000		-		0.000	0.000	0.139	-
Subtotal			4.219	1.997		4.018		2.871		-		2.871	0.000	13.105	N/A

Remarks
Overall decrease is due to TSS programmatic rephrase to better align with the schedule.

	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	192.826	35.090	36.833	27.494	-	27.494	Continuing	Continuing	N/A

Remarks
Overall decrease is primarily attributed to completion of ISMT ballistic testing and data capture, FET SVET design, and RTAM Ballistic Concrete testing.

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

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Combined Arms Command & Control Training Upgrade System (CACCTUS)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
CACCTUS Software Development Integration			◆				◆			◆				◆				◆				◆				◆		
LVC-TE Pre Development	◆																											

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Deployable Virtual Training Environment (DVTE)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Software Development Integration				◆				◆				◆				◆				◆				◆				◆

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Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Software Development Integration			◆				◆				◆				◆				◆				◆				◆	
SW Re-Engineering MIPR		◆				◆				◆				◆				◆				◆				◆		

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

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Ranges and Training Area Management	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
KDAS Efforts										◆																		
Electronic Warfare (EW)			◆				◆				◆																	
CPM RISCon-T Development				◆			◆				◆				◆				◆					◆				

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Supporting Arms Virtual Trainer (SAVT)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
SW Development and Integration		◆				◆				◆				◆				◆				◆				◆		

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Immersive Training Range Support	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Computer Generated Forces (CGF)						◆				◆					◆													
ITRS Mobile Immersive Training Enviormnet (MITE)						◆				◆				◆														
Blank Fire Only (BFO) AK47 Weapon Testing																												
CPM		◆					◆			◆					◆				◆									

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Force on Force Training Systems (FoFTS)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
FoFTS MCTIS-V Development					●																							
FoFTS MCTIS-WS Development							●																					

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Training Simulation Support	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
LVC-TE System Development Increment 1			◆				◆			◆				◆				◆				◆					◆				◆	
LVC-TE System Development Front End Analysis						◆																										
Minimum Viable Capability Release (MVCR):					◆		◆		◆		◆		◆		◆		◆		◆		◆		◆		◆		◆		◆		◆	

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Marine Corps Training Information Management Systems (MCTIMS)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Testing Event				◆				◆				◆																
Engineering Event				◆		◆		◆		◆		◆																
Contracting Event			▲					▲																				

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Family of Egress Trainers (FET)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Contract Award FY23								▲																								

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Indoor Simulated Marksmanship Trainer	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Ballistic Testing							■																					
Data Capture							■																					
Weapons Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Combined Arms Command & Control Training Upgrade System (CACCTUS)				
CACCTUS Software Development Integration: FY22 CACCTUS Software Development Integration	3	2022	3	2022
CACCTUS Software Development Integration: FY23 CACCTUS Software Development Integration	3	2023	3	2023
CACCTUS Software Development Integration: FY24 CACCTUS Software Development Integration	2	2024	2	2024
CACCTUS Software Development Integration: FY25 CACCTUS Software Development Integration	2	2025	2	2025
CACCTUS Software Development Integration: FY26 CACCTUS Software Development Integration	2	2026	2	2026
CACCTUS Software Development Integration: FY27 CACCTUS Software Development Integration	2	2027	2	2027
CACCTUS Software Development Integration: FY28 CACCTUS Software Development Integration	2	2028	2	2028
LVC-TE Pre Development: System Integration (FY22)	2	2022	2	2022
Deployable Virtual Training Environment (DVTE)				
Software Development Integration: FY22 Software Development Integration	4	2022	4	2022
Software Development Integration: FY23 Software Development Integration	3	2023	3	2023
Software Development Integration: FY24 Software Development Integration	2	2024	2	2024
Software Development Integration: FY25 Software Development Integration	2	2025	2	2025
Software Development Integration: FY26 Software Development Integration	2	2026	2	2026
Software Development Integration: FY27 Software Development Integration	2	2027	2	2027
Software Development Integration: FY28 Software Development Integration	2	2028	2	2028

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS)</i>				
Software Development Integration: FY22 Software Development Integration	3	2022	3	2022
Software Development Integration: FY23 Software Development Integration	3	2023	3	2023
Software Development Integration: FY24 Software Development Integration	3	2024	3	2024
Software Development Integration: FY25 Software Development Integration	3	2025	3	2025
Software Development Integration: FY26 Software Development Integration	3	2026	3	2026
Software Development Integration: FY27 Software Development Integration	3	2027	3	2027
Software Development Integration: FY28 Software Development Integration	3	2028	3	2028
<i>Ranges and Training Area Management</i>				
KDAS Efforts: FY24 KDAS Efforts	2	2024	2	2024
Electronic Warfare (EW): FY22 Electronic Warfare (EW)	3	2022	3	2022
Electronic Warfare (EW): FY23 Electronic Warfare (EW)	3	2023	3	2023
Electronic Warfare (EW): FY24 Electronic Warfare (EW)	3	2024	3	2024
CPM RISCon-T Development: CPM RISCon-T SW Integration FY22	4	2022	4	2022
CPM RISCon-T Development: CPM RISCon-T SW Integration FY23	3	2023	3	2023
CPM RISCon-T Development: CPM RISCon-T SW Integration FY24	3	2024	3	2024
CPM RISCon-T Development: CPM RISCon-T SW Integration FY25	3	2025	3	2025
CPM RISCon-T Development: CPM RISCon-T SW Integration FY26	3	2026	3	2026

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CPM RISCon-T Development: CPM RISCon-T SW Integration FY27	3	2027	3	2027
Supporting Arms Virtual Trainer (SAVT)				
SW Development and Integration: FY22 Task Order Award	2	2022	2	2022
SW Development and Integration: FY23 Task Order Award	2	2023	2	2023
SW Development and Integration: FY24 Task Order Award	2	2024	2	2024
SW Development and Integration: FY25 Task Order Award	2	2025	2	2025
SW Development and Integration: FY26 Task Order Award	2	2026	2	2026
SW Development and Integration: FY27 Task Order Award	2	2027	2	2027
SW Development and Integration: FY28 Task Order Award	2	2028	2	2028
Immersive Training Range Support				
Computer Generated Forces (CGF): FY22 Computer Generated Forces (CGF)	2	2023	2	2023
Computer Generated Forces (CGF): FY23 Computer Generated Forces (CGF)	2	2024	2	2024
Computer Generated Forces (CGF): FY24 Computer Generated Forces (CGF)	2	2025	2	2025
ITRS Mobile Immersive Training Enviormnet (MITE): ITRS Mobile Immersive Training Enviormnet (MITE) FY23	2	2023	2	2023
ITRS Mobile Immersive Training Enviormnet (MITE): ITRS Mobile Immersive Training Enviormnet (MITE) FY24	2	2024	2	2024
ITRS Mobile Immersive Training Enviormnet (MITE): ITRS Mobile Immersive Training Enviormnet (MITE) FY25	2	2025	2	2025
Blank Fire Only (BFO) AK47 Weapon Testing: NSWC Corona AK47 Testing	2	2022	2	2023
CPM: CPM (2022)	3	2022	3	2022
CPM: CPM (2023)	3	2023	3	2023
CPM: CPM (2024)	3	2024	3	2024
CPM: CPM (2025)	3	2025	3	2025
CPM: CPM (2026)	3	2026	3	2026
Force on Force Training Systems (FoFTS)				

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
FoFTS MCTIS-V Development: FY22 FoFTS MCTIS-V Development	2	2023	2	2023
FoFTS MCTIS-V Development: FY23 FoFTS MCTIS-V Development	3	2023	3	2023
FoFTS MCTIS-WS Development: FY23 FoFTS MCTIS-WS Development	3	2023	3	2023
FoFTS MCTIS-WS Development: FY24 FoFTS MCTIS-WS Development	2	2024	2	2024
FoFTS MCTIS-WS Development: FY25 FoFTS MCTIS-WS Development	2	2025	2	2025
Training Simulation Support				
LVC-TE System Development Increment 1: FY22 LVC-TE System Development Increment 1	3	2022	3	2022
LVC-TE System Development Increment 1: FY23 LVC-TE System Development Increment 1	3	2023	3	2023
LVC-TE System Development Increment 1: FY24 LVC-TE System Development Increment 1	2	2024	2	2024
LVC-TE System Development Increment 1: FY25 LVC-TE System Development Increment 1	2	2025	2	2025
LVC-TE System Development Increment 1: FY26 LVC-TE System Development Increment 1	2	2026	2	2026
LVC-TE System Development Increment 1: FY27 LVC-TE System Development Increment 1	2	2027	2	2027
LVC-TE System Development Increment 1: FY28 LVC-TE System Development Increment 1	2	2028	2	2028
LVC-TE System Development Front End Analysis: Front End Analysis FY23	2	2023	2	2023
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):1st FY23	1	2023	1	2023
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):3Qtr FY23	3	2023	3	2023
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):1st FY24	1	2024	1	2024

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2315 / Training Devices/Simulators
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):3Qtr FY24	3	2024	3	2024
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):1st FY25	1	2025	1	2025
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):3Qtr FY25	3	2025	3	2025
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):1st FY26	1	2026	1	2026
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR): 3Qtr FY26	3	2026	3	2026
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):1st FY27	1	2027	1	2027
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR): 3Qtr FY27	3	2027	3	2027
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR):1st FY28	1	2028	1	2028
Minimum Viable Capability Release (MVCR):: Minimum Viable Capability Release (MVCR): 3Qtr FY28	3	2028	3	2028
Marine Corps Training Information Management Systems (MCTIMS)				
Testing Event: GAT FY22 Testing Event	4	2022	4	2022
Testing Event: GAT FY23 Testing Event	4	2023	4	2023
Testing Event: GAT FY24 Testing Event	4	2024	4	2024
Engineering Event: Software Release FY22 4Q	4	2022	4	2022
Engineering Event: Software Release FY23 2Q	2	2023	2	2023
Engineering Event: Software Release FY23 4Q	4	2023	4	2023
Engineering Event: Software Release FY24 2Q	2	2024	2	2024
Engineering Event: Software Release FY24 4Q	4	2024	4	2024

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

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Contracting Event: Contract Award FY22	3	2022	3	2022
Contracting Event: Contract Award FY23	3	2023	3	2023
<i>Family of Egress Trainers (FET)</i>				
Contract Award FY23: Contract Award FY23	4	2023	4	2023
<i>Indoor Simulated Marksmanship Trainer</i>				
Ballistic Testing: Ballistic Testing	3	2023	3	2023
Data Capture: Data Capture	3	2023	3	2023
Weapons Development: Weapons Development (Javelin)	3	2023	3	2023
Weapons Development: Weapons Development (M27)	3	2023	3	2023
Weapons Development: Weapons Development (M240)	3	2023	3	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2503 / Initial Issue			
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
2503: <i>Initial Issue</i>	68.130	4.213	13.294	5.850	-	5.850	13.961	14.904	11.114	11.379	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding provides research, development, test, and evaluation (RDT&E) on low cost items with an emphasis on Non-Developmental Items/Commercial-Off-the-Shelf (NDI/COTS) available items. Much of the RDT&E is conducted in coordination/concert with other services and joint organizations, and in consideration of RDT&E efforts being pursued by the other Services. Items approved for procurement will transition into Operation and Maintenance Marine Corps accounts for Marine Corps Uniforms, Cold Weather Mountaineering, and Load Bearing and Pack Systems, Family of Shelters, Combat Field Feeding Systems, and Family of Field Medical Equipment. Family of Field Medical Equipment items approved for procurement will also transition to the Procurement, Marine Corps account. The benefits will be reduced logistics, less weight, improved combat effectiveness, better echelon I and II care for Marines, improved individual and unit protection, expeditionary feeding platforms, tactical mobility, calibration and maintenance, etc. The employment of state of the art equipment will ensure Marines are equipped and supported with the best items that technology can offer.

The PM Infantry Weapons portfolio of capabilities encompasses Marine Corps Uniforms, Cold Weather and Mountaineering, Load Bearing and Pack Systems, and Individual Warfighting Equipment. Load Bearing and Pack Systems now includes the waterproof bag efforts previously included under Individual Warfighting Equipment. The continual research development and testing of technological advancements leads to performance enhancements, upgrades and modifications to legacy systems and new developments. Funding for this capability area leverages other Services' and governmental partners' efforts to maximize returns on investment and promote coordination and cooperation for same or similar requirements and capabilities. The objective is to equip individual Marines with uniforms and combat equipment to maximize effectiveness in every environment across the full range of military operations, and includes support to the basic recruit issue seabag.

The Family of Field Medical Equipment (FFME) focus is to provide state of the art medical equipment and emerging medical technology that will improve the clinical outcomes for casualties. The objective is to replace obsolete items with those that fulfill the requirements and needs while increasing performance characteristics in the areas of energy efficiency, durability, reliability, and survivability while reducing weight and size in austere environments of a variety of climes. The focus is also to update and promote new supporting technologies and joint interoperability of operational medical equipment in support of Force Design 2030 Littoral Operation in a Contested Environment and Expeditionary Advanced Base Operations (EABO).

The Family of Shelters and Shelters Equipment (FSSE) and The Family of Combat Field Feeding Systems (CFFS) portfolio focus is to provide scalable expeditionary capabilities to the warfighter, with specific emphasis on supporting Expeditionary Advanced Base Operations (EABO) and austere base establishment in the littorals. The FSSE funding will be used to improve legacy material solutions and develop new solutions that protect the Fleet Marine Force from observation, detection, adverse climatic conditions, and combat hazards. Furthermore, continuation of camouflage research which is vital to provide both cover and concealment in visual, signature reduction, and infrared and radar spectrums against near peer adversaries in support of the Commandant's Planning Guidance. Continuation of shelter research and development is required to design more reliable systems, lighten current shelters and shelter systems and minimize power requirements for environmental systems in support of EABO.

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The Family of CFFS funding seeks to maximize fuel efficiency, reduce size and weight, and improve transportability of equipment used to provide nutrition on the go to Marines conducting training and contingency operations in future EABO and forward operating environments.

The Calibration and Maintenance Program (CAMP) calibrates the majority of tools and test equipment that ensure the safe and accurate operation of the ground weapon systems required to conduct Expeditionary Advanced Base Operations. The entire ground maintenance effort relies on CAMP activities to maintain combat effectiveness. This funding will be used to identify and assess the latest technology in calibration equipment, which is necessary to replace obsolete equipment, increase performance and reduce the footprint of deployable calibration sets. Funding will also develop new automated test procedures and protocols aimed at making the Marine Corps' deployable ground calibration sets more efficient.

Family of Expeditionary Water Systems (FEWS) is a family of systems line that contains purification, storage, distribution, hygiene, and test systems for water. This capability is necessary to provide safe and potable water to Marines in expeditionary environments. The family contains individual Table of Allowance Material Control Numbers which supports Fleet Marine Force (FMF), Marine Air-Ground Task Force (MAGTF) operations, and future operating concepts by providing all aspects of land-based water support to include test analysis, purification, reuse, storage, transfer, dispensing, and field hygiene support.

Family of Expeditionary Fuel Systems (FEFS) is a family of systems that contains highly versatile fuel systems in support of FMF operations. The family contains individual Table of Allowance Material Control Numbers which support FMF, MAGTF operations, and future operating concepts by providing all aspects of land and littoral-based fuel support to include receiving, test, additization, storage, sensors and metering, and transfer and dispensing of fuel.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Marine Corps Uniforms (MCU)	0.840	1.125	0.940	0.000	0.940
Articles:	-	-	-	-	-
FY 2023 Plans:					
- Continue test and evaluation of Short Wave Infrared (SWIR) signature mitigation and Flame Resistant (FR) properties into the Marine Corps Combat Utility Uniform (MCCUU) resulting in a NexGen MCCUU. Test and evaluation includes follow-on user evaluations of NexGen MCCUUs and material property tests with SWIR mitigation and FR improvements that lead to an updated MCCUU specification for economical FR/SWIR capabilities in the NexGen MCCUU for all Marines.					
- Continue research and development for lighter uniforms, and footwear, and develop upgraded specifications for sustainment by DLA that leverage emerging technologies in durability, design, and development.					
- Continue research and development for Marine clothing efforts, to include field and dress uniform certification, improvements to maternity service and dress uniforms, and associated accoutrements which includes badges, ribbons, and devices.					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue research, development, and testing to enhance appearance and service life of seabag issue items, which consists of initial basic training allowance of clothing, footwear, and associated individual uniform items resulting in upgraded specifications for sustainment by DLA.</p> <p>- Conduct research, development, and testing of emergent CMC initiatives as requested.</p> <p>FY 2024 Base Plans:</p> <p>- Continue test and evaluation of signature mitigation and flame resistant (FR) properties and other CD&I prioritized attributes resulting in a NexGen MCCUU and/or a Close Combat Uniform. Test and evaluation includes follow-on user evaluations of NexGen MCCUUs, Close Combat Uniform along with material property tests in the laboratory.</p> <p>- Continue research and development for lighter uniforms, and footwear, and develop upgraded specifications for sustainment by DLA that leverage emerging technologies in durability, design, and development. Includes efforts in the Marine Corps Uniform Certification Program.</p> <p>- Continue research and development for Marine clothing efforts, to include field and dress uniform certification improvements to maternity service and dress uniforms, and associated accoutrements which includes badges, ribbons, and devices. Includes efforts in the Marine Corps Uniform Certification Program.</p> <p>- Continue research, development, and testing to enhance appearance and service life of recruit initial seabag issue items, which consists of initial basic training allowance of clothing, footwear, and associated individual uniform items resulting in upgraded specifications for sustainment by DLA.</p> <p>- Conduct research, development, and testing of emergent CMC initiatives as requested.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.185M from FY 2023 to FY 2024 reduces the amount of continued material property product development, testing, and follow on user evaluations of NexGen MCCUU/ Close Combat Uniform with signature management mitigation, and FR improvements.</p>					
<p>Title: Cold Weather and Mountaineering (CWM)</p> <p align="right">Articles:</p>	0.000 -	0.194 -	0.130 -	0.000 -	0.130 -
<p>FY 2023 Plans:</p> <p>- Initiate material tests as part of research and development of emerging materials and technology to enhance existing cold weather clothing and equipment effectiveness while lightening the load of the individual Marine.</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Initiate research and evaluation of the Cold Weather clothing and equipment items with lighter materials that provide increased insulation and protection from the elements.</p> <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue material tests as part of research and development of emerging materials and technology to enhance existing cold weather clothing and equipment effectiveness to include FR protection and signature management while lightening the load of the individual Marine. - Continue research and evaluation of the Cold Weather clothing and equipment items with lighter materials that provide increased insulation and protection from the elements. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The decrease funding from FY 2023 to FY 2024 is due to a reduced efforts in Cold Weather and Mountaineering research and evaluation.</p>					
<p>Title: Load Bearing and Pack Systems (LBPS)</p> <p align="right">Articles:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue product improvements and upgrades for LBPS by leveraging technological advancements of industry; lighten load and increase mobility of effectiveness. - Continue to evaluate pack frame system capable of carrying heavy crew-serve weapon systems. - Continue implementation of power and data management into Load Bearing equipment (Main Pack and Assault Pack). - Complete evaluations on loadbearing equipment such as Marine Corps packs and pouch sets. - Complete the design, development, and evaluation of the waist pouch. - Initiate the evaluation of materials capable of providing SWIR capabilities in the USMC Pack and Pouch System. <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue product improvements and upgrades for LBPS by leveraging technological advancements of industry; lighten load and increase mobility of effectiveness. - Continue to evaluate pack frame system capable of carrying heavy crew-serve weapon systems. 	0.214 -	0.427 -	0.407 -	0.000 -	0.407 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Continue implementation of power and data management into loadbearing equipment (Main Pack and Assault Pack). - Continue the evaluation of materials capable of providing SWIR capabilities in the USMC Pack and Pouch System. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Load Bearing and Pack System decrease from FY 2023 to FY 2024 is due to the completion of the waist belt development effort.</p>					
<p>Title: *Family of Field Medical Equipment (FFME)</p> <p align="right">Articles:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Initiate product verification test and evaluation for equipment such as expeditionary medical oxygen, whole blood utilization, and traumatic brain injury treatment. - Continue research and development for Project Phoenix medical support framework in support of the Marine Littoral Regiment (MLR). Research validates engineering changes to Authorized Medical Allowance Lists (AMAL) product baselines. - Continue research to develop advanced wound healing bandages for prolonged field care in the MLR under Distributed Maritime Operations (DMO)/Littoral Operations in a Contested Environment (LOCE), validating engineering changes to AMAL product baselines. - Continue research, development, testing, and evaluation of new packing configurations of currently fielded forward surgical and trauma resuscitation capabilities and patient transport capabilities to reduce the cubic foot space requirements in order to utilize limited lift capabilities. Conduct further analysis to validate the existing patient condition code requirements, and patient streams against future casualty stream estimates in the corresponding future operational environment(s) to identify material that can be removed from capabilities without impacting effectiveness. - Continue to test COTS/NDI medical equipment items for the En Route Care System (ERCS), Forward Resuscitative Surgery System (FRSS), and Shock Trauma Platoon (STP) to determine future viability in an operational environment. 	1.186	2.186	2.126	0.000	2.126
	-	-	-	-	-

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue testing of medical equipment items to evaluate their energy efficiency, functionality, and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment.</p> <p>- Continue testing and product development for possible application technology for insertion, such as: portable patient life support systems, expeditionary medical refrigeration, oxygen production, sterilization, whole blood utilization, patient warming, and standardization of currently independent equipment sets to be employed for forward resuscitative, surgical care, and casualty evacuation.</p> <p>FY 2024 Base Plans:</p> <p>- Complete product verification test and evaluation for equipment such as expeditionary medical oxygen, whole blood utilization, and traumatic brain injury treatment.</p> <p>- Continue research and development for Project Phoenix medical support framework in support of the MLR to validate engineering changes to AMAL product baselines.</p> <p>- Continue research to develop advanced wound healing bandages for prolonged field care in the MLR under DMO/LOCE, validating engineering changes to AMAL product baselines.</p> <p>- Continue research, development, testing, and evaluation of new packing configurations of currently fielded forward surgical and trauma resuscitation capabilities and patient transport capabilities to reduce the cubic foot space requirements in order to utilize limited lift capabilities. Conduct further analysis to validate the existing patient condition code requirements and patient streams against future casualty stream estimates in the corresponding future operational environment(s) to identify material that can be removed from capabilities without impacting effectiveness.</p> <p>- Continue to test COTS/NDI medical equipment items for the ERCS, FRSS, and STP to determine future viability in an operational environment.</p> <p>- Continue testing of medical equipment items to evaluate their energy efficiency, functionality, and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment.</p> <p>- Continue testing and product development for possible application technology for insertion, such as: portable patient life support systems, expeditionary medical refrigeration, oxygen production, sterilization, whole blood</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
utilization, patient warming, and standardization of currently independent equipment sets to be employed for forward resuscitative, surgical care, and casualty evacuation. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 aligns with costs associated with the MLR and AMAL Studies in accordance with the 2030 Concept of Operations (CONOPS). Decrease also aligns with testing and evaluation completion of expeditionary medical oxygen in FY 2024.					
Title: *Family of Shelters and Shelter Equipment (FSSE) Articles:	0.000 -	0.199 -	0.549 -	0.000 -	0.549 -
FY 2023 Plans: - Continue the evaluation and development of FSSE energy efficient ECPs such as alternative production techniques and designs. FY 2024 Base Plans: - Continue the evaluation and development of FSSE energy efficient ECPs such as alternative production techniques and designs. - Initiating development of Indo-Pacific (INDOPACOM) Ultra Light Weight Camouflage Net System (ULCANS) variant and conduct user evaluation. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 aligns with the requirement to develop an INDOPACOM ULCANS variant and conduct user evaluation to assess the new color's ability to conceal in tropical operating environments. Variants will be assessed by III MEF in South Pacific region to assess the new color's effectiveness to conceal against adversary sensors.					
Title: Calibration and Maintenance Program (CAMP) Articles:	0.297 -	0.249 -	0.254 -	0.000 -	0.254 -
FY 2023 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue exploration of emerging technologies to enhance technical capabilities of individual calibration equipment (standards) used within expeditionary calibration facilities by deployed Marine Corps units. New calibration standards are required to replace obsolete items.</p> <p>FY 2024 Base Plans: - Continue exploration of emerging technologies to enhance technical capabilities of individual calibration equipment (standards) used within expeditionary calibration facilities by deployed Marine Corps units. New calibration standards are required to replace obsolete items.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The increase from FY 2023 to FY 2024 is to continue exploration of emerging technologies to enhance technical capabilities of individual calibration equipment (standards) used within expeditionary calibration facilities by deployed Marine Corps units. New calibration standards are required to replace obsolete items.</p>					
<p>Title: *Family of Combat Field Feeding (CFFS)</p> <p align="right">Articles:</p>	0.318	0.068	0.070	0.000	0.070
<p>FY 2023 Plans: - Continue to reduce the overall logistics burden by researching and testing technological improvements for CFFS components such as commercial food service and alternative field sanitation solutions. - Continue research and development of lighter weight and scalable field feeding and field sanitation equipment that use alternate energy sources or provide reduced fuel consumption.</p> <p>FY 2024 Base Plans: - Continue to reduce the overall logistics burden by researching and testing technological improvements for CFFS components such as commercial food service and alternative field sanitation solutions. - Continue research and development of lighter weight and scalable field feeding and field sanitation equipment that use alternate energy sources or provide reduced fuel consumption.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase from FY 2023 to FY 2024 is due to projected labor cost increase for research and testing technology to improve CFFS components such as commercial food service and field sanitation solutions.						
Title: Family of Expeditionary Water Systems (FEWS)		0.753	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: Family of Expeditionary Fuel Systems (FEFS)		0.605	8.846	1.374	0.000	1.374
Articles:		-	-	-	-	-
FY 2023 Plans: -Initiate and continue research of alternative fuel distribution and storage technologies in support of EABO and the Commandant's Force Design 2030 implementation plan. -Continue research and development of the LPDS capability under development by the Office of Naval Research, developing sub-components, integrating autonomy, and supporting testing and certifications to improve the system's technology readiness level.						
FY 2024 Base Plans: -Initiate testing of sensor and meter reporting technologies for fuel systems. -Continue research of alternative fuel distribution and storage technologies in support of EABO and the Commandant's Force Modernization 2030 implementation plan, supporting the Self-support Portable Distributed Refueling System (SPDRS) and Expeditionary Fuel Dispensing System (EFDS) development, and modernization of other legacy fuel systems.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
The FY 2023 to FY 2024 decrease is due to realignment of funds to PE 0603635M to support the advance prototyping development conducted by the Office of Naval Research for the LPDS.					
Accomplishments/Planned Programs Subtotals	4.213	13.294	5.850	0.000	5.850

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/6522: Family of Field Medical Equipment (FFME)	8.105	21.780	5.457	-	5.457	10.968	50.562	51.562	52.593	Continuing	Continuing
• PMC/4181: Calibration & Maintenance Program (CAMP).	2.883	0.129	0.130	-	0.130	0.137	2.806	2.862	2.919	0.000	38.460
• PMC/6670: Family of Expeditionary Water Systems (FEWS)	0.000	3.670	5.637	-	5.637	8.175	12.415	12.650	12.907	Continuing	Continuing
• PMC/6277: Family of Expeditionary Fuel Systems (FEFS)	2.161	7.854	12.956	-	12.956	30.458	32.923	31.522	32.506	Continuing	Continuing
• PMC/6670: Family of Shelters and Shelter Equipment (FSSE)	0.000	18.758	17.695	-	17.695	15.606	14.327	14.614	23.340	0.000	104.340
• RDTEN/0603635M/3835: FEFS	0.000	0.000	14.124	-	14.124	6.185	0.000	0.000	0.000	0.000	20.309
• RDTEN/0603635M/7400: FEFS	4.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.700

Remarks

D. Acquisition Strategy

Cold Weather and Mountaineering, Load Bearing and Pack Systems, Individual Warfighting Equipment, Marine Corps Uniforms: Items utilize various acquisition strategies. These programs leverage heavily on current developments and technology in commercial industry. As a result, the government's R&D phase is relatively short. Contracting is performed by either Marine Corps Systems Command, the Naval Research Laboratory, or the U.S. Army Natick Soldier Research, Development, and Engineering Center via Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts. ID/IQ contracts are used to decrease the government risk, allow maximum contract flexibility and capitalize on the savings realized by utilizing Economic Order (EO) quantities.

Family of Shelters: The Shelter acquisition strategy is to modify non-developmental items (NDI) to further meet the requirements of the Marine Corps, to support development of multi-service items through inter-service agreements and to adopt commercial-off-the-shelf (COTS) items where applicable.

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<p>Family of Field Medical Equipment: These programs leverage heavily on current development and technology in the commercial medical industry. The field medical acquisition strategy is to modify NDI and adopt COTS items. Due to the nature of medical device development and the USMC reliance on commercial RDT&E practices, it is frequently difficult to accurately predict successful transition due in part to strict Food and Drug Administration oversight and approval processes.</p> <p>Combat Field Feeding Systems: This program utilized various acquisition strategies and leverages heavily on current developments and technology in commercial industry and other Service field feeding systems. As a result, the government's RDT&E phase is relatively short. Contracting is performed by either Marine Corps Systems Command Contracting Directorate or the US Army Combat Capabilities Development Command (DoD Executive Agent for Field Feeding) via ID/IQ contracts.</p> <p>Calibration and Maintenance Program (CAMP): The CAMP acquisition strategy is to evaluate NDI items and ask industry for enhancements and modifications to meet technical and expeditionary requirements. This will be in concert with the Navy's calibration RDT&E efforts.</p> <p>Family of Expeditionary Water Systems (FEWS): Low/No Power Water Purification System (LNPWPS) data collection and deliverables from a Phase II Small Business Innovative Research effort and testing will inform future requirements. Funding also supports the product verification testing of modification kits for the Lightweight Water Purification System (LWPS).</p> <p>Family of Expeditionary Fuel Systems (FEFS): The FEFS acquisition strategy is to continue researching alternative fuel distribution and storage technologies for the Self-support Portable Distributed Refueling System (SPDRS) and Expeditionary Fuel Dispensing System (EFDS) development, supporting portfolio capability modernization, along with initiating testing of sensor and meter reporting technologies through lab In-Service Engineer Agent support. Realignment of funds from PE 0206623M (BA07/6.7) to PE 0603635M (BA04/6.4) is planned to support the prototype development conducted by the Office of Naval Research (ONR) for the Low-Profile Distribution System (LPDS).</p>		

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

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Marine Corps Uniforms	MIPR	USA NSRDEC : Natick, MA	6.802	0.420	Mar 2022	0.565	Mar 2023	0.470	Mar 2024	-		0.470	Continuing	Continuing	Continuing
Cold Weather & Mountaineering	MIPR	USA NSRDEC : Natick, MA	2.981	0.000		0.194	Dec 2022	0.130	Dec 2023	-		0.130	0.000	3.305	Continuing
Load Bearing and Pack Systems	C/FFP	MCSC : Quantico, VA	1.927	0.214	Feb 2022	0.427	Feb 2023	0.407	Feb 2024	-		0.407	Continuing	Continuing	Continuing
Family of Field Medical	MIPR	MCSC : Quantico, VA	0.000	0.000		0.000		0.815	Jan 2024	-		0.815	0.000	0.815	-
Family of Shelters and Shelter Equipment	MIPR	DEVCOM : Natick, MA	1.264	0.000		0.199	Mar 2023	0.549	Mar 2024	-		0.549	0.000	2.012	-
Calibration and Maintenance Program	WR	NSWC : Corona, CA	0.736	0.297	Jan 2022	0.249	Jan 2023	0.254	Jan 2024	-		0.254	Continuing	Continuing	Continuing
Family of Expeditionary Fuel Systems	Various	Various : Various	0.415	0.363	Mar 2022	0.000		0.000		-		0.000	0.000	0.778	-
Family of Expeditionary Fuel Systems	MIPR	ONR : Arlington, VA	0.510	0.000		8.846	Feb 2023	0.000		-		0.000	0.000	9.356	-
Prior Year Cumulative Funding	Various	Various : Various	26.454	0.000		0.000		0.000		-		0.000	0.000	26.454	-
Subtotal			41.089	1.294		10.480		2.625		-		2.625	Continuing	Continuing	N/A

Remarks
Overall decrease from FY 2023 to FY 2024 is largely attributed to the realignment of funds to PE 0603635M RD TEN to support the advanced prototyping development conducted by the Office of Naval Research for the Low Profile Distribution System and reduced product development of NexGen MCCUU/Close Combat Uniform.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	1.096	0.000		0.000		0.000		-		0.000	0.000	1.096	-
Subtotal			1.096	0.000		0.000		0.000		-		0.000	0.000	1.096	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	MIPR	USA NSRDEC : Natick, MA	2.028	0.420	Mar 2022	0.560	Dec 2022	0.470	Dec 2023	-		0.470	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	U.S. Army Aeromedical Research Lab : Ft. Rucker, AL	0.443	0.176	May 2022	0.750	Mar 2023	0.200	Apr 2024	-		0.200	0.000	1.569	-
Operational Test & Evaluation (OT&E)	MIPR	NSWC : Crane, ID	0.330	0.000		0.240	Dec 2022	0.000		-		0.000	0.000	0.570	-
Operational Test & Evaluation (OT&E)	WR	NHRC : Silver Spring MD	0.249	0.199	Apr 2022	0.200	Nov 2022	0.200	Mar 2024	-		0.200	0.000	0.848	-
Operational Test & Evaluation (OT&E)	MIPR	NSWC : Dahlgren, VA	11.081	0.375	Mar 2022	0.250	Mar 2023	0.300	Dec 2023	-		0.300	0.000	12.006	-
Developmental Test & Evaluation (DT&E)	MIPR	NSWC Indian Head : Indian Head, MD	0.376	0.000		0.350	May 2023	0.000		-		0.000	0.000	0.726	-
Operational Test & Evaluation (OT&E)	MIPR	NSWC Dahlgren : Dahlgren, VA	0.050	0.000		0.250	Dec 2022	0.250	Apr 2024	-		0.250	0.000	0.550	-
Developmental Test & Evaluation (DT&E)	MIPR	US Army CCDC/ DEVCOM : Natick, MA	1.029	0.104	Aug 2022	0.068	Dec 2022	0.070	Dec 2023	-		0.070	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	DEVCOM : Natick, MA	0.046	0.232	Jul 2022	0.000		0.000		-		0.000	0.000	0.278	-
Developmental Test & Evaluation (DT&E)	C/FFP	MCSC : Quantico, VA	0.273	0.101	Jul 2022	0.000		0.000		-		0.000	0.000	0.374	-
Developmental Test & Evaluation (DT&E)	MIPR	MCSC : Quantico VA	0.000	0.032	Mar 2022	0.000		0.000		-		0.000	0.000	0.032	-
Developmental Test & Evaluation (DT&E)	MIPR	NAVFAC : Port Huene	0.097	0.257	Apr 2022	0.000		0.000		-		0.000	0.000	0.354	-
Developmental Test & Evaluation (DT&E)	Various	Various : Various	0.810	0.242	Mar 2022	0.000		1.374	Dec 2023	-		1.374	0.000	2.426	-
Developmental Test & Evaluation (DT&E)	MIPR	GVSC/CCDC : Warren, MI	0.016	0.131	Mar 2022	0.000		0.000		-		0.000	0.000	0.147	-
Developmental Test & Evaluation (DT&E)	MIPR	USAARL : Ft. Rucker, AL	0.000	0.383	Jul 2022	0.000		0.175	Dec 2023	-		0.175	0.000	0.558	-

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

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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	MIPR	DLA Troop Support : Philadelphia, PA	0.000	0.214	Aug 2022	0.000		0.000		-		0.000	0.000	0.214	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	8.449	0.000		0.000		0.000		-		0.000	0.000	8.449	-
Subtotal			25.277	2.866		2.668		3.039		-		3.039	Continuing	Continuing	N/A

Remarks
Overall increase from FY 2023 to FY 2024 is primarily attributed to initiation of testing of sensor and meter reporting technologies for fuel systems and Expeditionary Fuel Dispensing System development.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Family of Field Medical	Various	MARCORSYSCOM : Quantico, VA	0.208	0.053	Sep 2022	0.059	Sep 2023	0.081	Aug 2024	-		0.081	0.000	0.401	-
Family of Field Medical	Various	MCSC : Quantico, VA	0.072	0.000		0.087	Oct 2022	0.105	Oct 2023	-		0.105	0.000	0.264	-
Prior Year Cumulative Funding	Various	Various : Various	0.388	0.000		0.000		0.000		-		0.000	0.000	0.388	-
Subtotal			0.668	0.053		0.146		0.186		-		0.186	0.000	1.053	N/A

Remarks
No significant change.

	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	68.130	4.213	13.294	5.850	-	5.850	Continuing	Continuing	N/A

Remarks
Overall decrease from FY 2023 to FY 2024 is largely attributed to the realignment of funds to PE 0603635M RD TEN to support the advanced prototyping development conducted by the Office of Naval Research for the Low Profile Distribution System and reduced product development of NexGen MCCUU/Close Combat Uniform.

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

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Initial Issue p.1	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Marine Corps Uniforms (MCU)																												
Flame Resistant Testing																												
Lab Testing																												
Shade Lab Testing																												
Natick Lab Testing																												
Footwear Testing																												
Uniform Testing																												
Navy Natick Testing Effort Support																												
Cold Weather and Mountaineering (CWM)																												
Natick Testing Effort Support																												
Material Properties Lab Testing																												
Extreme Cold Weather Boot																												
Cold Weather User Evaluation																												
Insulation Layer 3 and 4 upgrade																												
Load Bearing and Pack Systems (LBPS)																												
USMC Sub Belt Improvement																												
Assault Pack Improvement																												
SWIR Material EVAL																												
Calibration And Maintenance Program (CAMP)																												
Develop & test emerging calibration equipment																												

2024PB - 0206623M - 2503

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206623M / MC Ground Cmbt Spt Arms
Sys

Project (Number/Name)
2503 / Initial Issue

Initial Issue p.2	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Family of Field Medical Equipment																												
AMAL Technology/Equipment Research and Product Development																												
AMAL Technology Research/Product Development																												
AMAL Technology/Equipment Testing and Evaluation																												
Field Medical Management Services																												
Family of Shelters and Shelter Equipment																												
Family of Shelters and Shelter Equipment Development																												
INDOPACOM ULCANS Variant Development																												
Family of Expeditionary Fuel Systems																												
Low Profile Distribution System																												
Family of Combat Field Feeding																												
Family of Combat Field Feeding Systems Development																												

2024PB - 0206623M - 2503

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2503 / Initial Issue

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Initial Issue p.1				
Marine Corps Uniforms (MCU): Flame Resistant Testing:	1	2023	4	2024
Marine Corps Uniforms (MCU): Lab Testing:	1	2023	4	2026
Marine Corps Uniforms (MCU): Shade Lab Testing:	1	2023	4	2026
Marine Corps Uniforms (MCU): Natick Lab Testing:	2	2023	3	2024
Marine Corps Uniforms (MCU): Footwear Testing:	2	2023	4	2024
Marine Corps Uniforms (MCU): Uniform Testing:	2	2023	4	2026
Marine Corps Uniforms (MCU): Navy Natick Testing Effort Support:	2	2023	4	2026
Cold Weather and Mountaineering (CWM): Natick Testing Effort Support:	2	2023	2	2024
Cold Weather and Mountaineering (CWM): Material Properties Lab Testing:	2	2023	2	2024
Cold Weather and Mountaineering (CWM): Extreme Cold Weather Boot:	2	2023	3	2024
Cold Weather and Mountaineering (CWM): Cold Weather User Evaluation:	2	2023	3	2024
Cold Weather and Mountaineering (CWM): Insulation Layer 3 and 4 upgrade:	2	2023	3	2024
Load Bearing and Pack Systems (LBPS): USMC Sub Belt Improvement: USMC Sub Belt Improvement	2	2023	2	2024
Load Bearing and Pack Systems (LBPS): Assault Pack Improvement: Assault Pack Improvement	2	2023	2	2024
Load Bearing and Pack Systems (LBPS): SWIR Material EVAL: SWIR Material EVAL	3	2023	3	2024
Calibration And Maintenance Program (CAMP): Develop & test emerging calibration equipment: Develop & test emerging calibration equipment	2	2022	4	2028
Initial Issue p.2				
Family of Field Medical Equipment: AMAL Technology/Equipment Research and Product Development:	1	2022	4	2022

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2503 / Initial Issue
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Family of Field Medical Equipment: AMAL Technology Research/Product Development:	2	2024	1	2025
Family of Field Medical Equipment: AMAL Technology/Equipment Testing and Evaluation:	1	2022	4	2028
Family of Field Medical Equipment: Field Medical Management Services:	1	2022	4	2028
Family of Shelters and Shelter Equipment: Family of Shelters and Shelter Equipment Development: Schedule Detail	3	2023	4	2028
Family of Shelters and Shelter Equipment: INDOPACOM ULCANS Variant Development: Schedule Detail	3	2024	4	2026
Family of Expeditionary Fuel Systems: Low Profile Distribution System: Medium Cal Iv/USV Demos	1	2023	4	2024
Family of Combat Field Feeding: Family of Combat Field Feeding Systems Development: Schedule Detail	1	2022	1	2028

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2513 / Body Armor
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2513: <i>Body Armor</i>	52.897	4.518	5.468	5.269	-	5.269	4.814	4.899	4.980	5.080	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Ballistic Protection Systems (BPS) provides the most technologically advanced protection at the lightest weight available in the world today. It provides the critical ballistic protective systems that save lives, reduce the severity of combat injuries, and increase combat effectiveness by keeping more Marines in the fight. Major BPS programs include: Plate Carrier Generation III (PC Gen III); Lightweight Plates (LWP); Enhanced Combat Helmet (ECH); Improved Ballistic Eyewear (IBE); Integrated Helmet System (IHS) and Hearing Enhancement. The major focus areas of all BPS programs are adapting ballistic protective systems to the constantly changing threat environment and leveraging emerging technologies to lighten the load and increase the mobility of each Marine.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Ballistic Protection Systems	4.518	5.468	5.269	0.000	5.269
Articles:	-	-	-	-	-
FY 2023 Plans:					
<ul style="list-style-type: none"> - Continue research with industry partners towards understanding and developing the future technology associated with next generation PPE (i.e. helmets, body armor, and hearing protection) to reduce bulk, weight, stiffness, and improve ballistic protection while increasing the mobility of the individual Marine. - Continue to research and develop solutions that improves fit, modularity, and integration of body armor systems. - Continue the development of data and power management components within helmets through prototype development and testing. - Complete testing and conduct user evaluations of the Integrated Helmet System (IHS). - Initiate research and development of the Next Generation Plate Carrier (PC GEN IV) to include enhanced camouflage protection and mitigation of Short Wave Infrared (SWIR) and thermal signature. Analyze Flame Resistant (FR) and non-FR materials with enhanced signature mitigation as it pertains to the evolution of body armor and plate carriers. 					
FY 2024 Base Plans:					
<ul style="list-style-type: none"> - Continue research with industry partners towards understanding and developing the future technology associated with next generation PPE (i.e. helmets, body armor, and hearing protection) to reduce bulk, weight, stiffness, and improve ballistic protection while increasing the mobility of the individual Marine. 					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2513 / Body Armor

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Continue to research and develop solutions that improves fit, modularity, and integration of body armor systems. - Continue the development of data and power management components within helmets through prototype development and testing. - Continue research and development of the Next Generation Plate Carrier (PC GEN IV) to include enhanced camouflage protection and mitigation of Short Wave Infrared (SWIR) and thermal signature. Analyze Flame Resistant (FR) and non-FR materials with enhanced signature mitigation as it pertains to the evolution of body armor and plate carriers. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Ballistic Protection System decrease from FY 2023 to FY 2024 is due to the completion of the initial IHS testing efforts.</p>					
Accomplishments/Planned Programs Subtotals	4.518	5.468	5.269	0.000	5.269

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

Remarks

D. Acquisition Strategy

Marine Corps Ballistic Protection Systems (BPS) research, development, testing & evaluation activities include seeking new developments in ballistic technology that feature reductions in weight, improvements in ballistic performance, enhanced operational effectiveness through improved product designs, and the application of new material technologies to reduce total ownership costs by improving the expected service life of fielded systems. In order to accomplish these goals, the Marine Corps uses a broad array of government and contractor performers to achieve the desired end state. This includes partnerships with government entities and research and development contracts and partnership intermediaries where applicable. The Marine Corps also leverages advancements in industry capabilities to rapidly field non-developmental and commercially available off-the-shelf armor solutions. Performance is confirmed by characterizing ballistic performance and data collected during user evaluations.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2513 / Body Armor
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development of Integrated Helmet (IHS)	C/FFP	MCSC : Quantico, VA	2.766	1.000	Dec 2021	0.000		0.000		-		0.000	0.000	3.766	-
Mosaic/Multi-layer Hard Armor Development	C/FFP	NRL : Washington DC	17.672	0.000		0.000		0.000		-		0.000	0.000	17.672	-
PC Gen III/Hard Armor Printed Plates	C/FFP	MCSC : Quantico, VA	4.638	0.000		0.000		0.000		-		0.000	0.000	4.638	-
Next Gen Plate Carriers	C/FFP	NCTRF : Natick, MA	0.000	0.000		1.000	Apr 2023	2.334	Apr 2024	-		2.334	0.000	3.334	-
MATLAB Software Development	C/FFP	NSWC : Crane, IN	0.000	0.276	Jul 2022	0.000		0.000		-		0.000	0.000	0.276	-
Subtotal			25.076	1.276		1.000		2.334		-		2.334	0.000	29.686	N/A

Remarks
The increase in FY 2024 is due to seeking new developments in ballistic technology that features reductions in weight, improvements in ballistic performance, and enhanced operational effectiveness through improved product designs.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Support (Army)	MIPR	CCDC SC : Natick, MA	3.225	0.886	Dec 2021	0.945	Dec 2022	1.212	Dec 2023	-		1.212	Continuing	Continuing	Continuing
Engineering Support (Navy)	WR	NCTRF : Natick, MA	0.170	0.170	Mar 2022	0.175	Mar 2023	0.175	Jan 2024	-		0.175	Continuing	Continuing	Continuing
Ballistic Protection Systems	MIPR	NCTRF : Natick, MA	0.918	0.000		0.300	Jan 2023	0.000		-		0.000	0.000	1.218	-
Ballistic Protection Systems Support Services-Eng,Log,PM	C/FFP	MCSC : Quantico, VA	1.668	1.655	Mar 2022	0.883	Mar 2023	0.848	Feb 2024	-		0.848	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	Various : Various	0.054	0.000		0.000		0.000		-		0.000	0.000	0.054	-
Subtotal			6.035	2.711		2.303		2.235		-		2.235	Continuing	Continuing	N/A

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2513 / Body Armor
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	Various	Various : Various	4.811	0.531	Dec 2021	2.165	Dec 2022	0.700	Dec 2023	-		0.700	0.000	8.207	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	16.975	0.000		0.000		0.000		-		0.000	0.000	16.975	-
Subtotal			21.786	0.531		2.165		0.700		-		0.700	0.000	25.182	N/A

Remarks
The overall decrease in FY 2024 is primarily due to the completion of Integrated Helmet System (IHS) testing.

	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	52.897	4.518	5.468	5.269	-	5.269	Continuing	Continuing	N/A

Remarks
Overall decrease in FY 2024 is primarily attributed to the completion of the Integrated Helmet System (IHS) testing efforts in FY 2023.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2513 / Body Armor
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Proj 2513	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Body Armor Improvements	IOC: Lightweight Plate																											
	LAT: PC GEN III & Lightweight Plate				Next Gen PC GEN IV Testing				LUE: Next Gen PC GEN IV																			
Integrated Helmet System (IHS)					Helmet Development and Testing																							
									LUE 3																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2513 / Body Armor

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2513				
Body Armor Improvements: IOC: Lightweight Plate	1	2022	1	2022
Body Armor Improvements: Lot Acceptance Testing (LAT): PC GEN III & Lightweight Plate	1	2022	1	2022
Body Armor Improvements: Next Gen PC GEN IV Development and Testing	1	2023	1	2024
Body Armor Improvements: LUE: Next Gen PC GEN IV	3	2024	3	2025
Integrated Helmet System (IHS): Helmet Development and Testing	2	2023	4	2023
Integrated Helmet System (IHS): LUE 3	3	2023	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2530 / Unmanned Expeditionary Systems			
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
2530: <i>Unmanned Expeditionary Systems</i>	0.000	0.000	0.000	16.039	-	16.039	11.339	10.949	10.282	8.673	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Prior to FY 2023, Unmanned Logistics System-Air (ULS-A) was funded in Project 4002 Family of Raid Reconnaissance. The establishment of this new project and realignment of funding more closely align the programatics of ULS-A to Unmanned Expeditionary Systems mission sets.

UES is a Commandant of the Marine Corps (CMC) Force Design 2030 (FD2030) initiative. FD2030 recognizes the complex, high threat and diverse environments in the INDOCOM area of operations encountered by Marine Air Ground Task Force (MAGTF) and Marine Littoral Regiments (MLRs). UES consists of the ULS-A Small (Tactical Resupply Unmanned Aircraft System-TRUAS) and the Medium ULS- A resupply vehicle. As system technology advances in future years, UES will also include emerging technologies to include autonomous distribution capabilities for elements across the MAGTF and MLR, enabling more diversified distribution and the sustainment of Marine Corps forces across future operating environments.

The TRUAS provides an unmanned organic battlefield logistics capability primarily in distribution of critical supplies in Expeditionary Advanced Base Operations (EABO) safely within the Surface to Air Missile (SAM) Weapon Engagement Zone (WEZ), where the risk to manned aircraft would deny manned aviation resupply operations. TRUAS will have the capability to carry 120-pound payloads at a distance of 12 kilometers at a cruise speed of 50 knots.

TRUAS will complete rapid prototyping in 2Q FY 2023. Integrated Test (IT) (IT includes Developmental Test (DT) and Operational Test (OT)) will complete 2Q FY 2023. Following a production decision planned for 2Q FY2023, a production contract award planned for 2Q FY 2023 allowing the program to reach Initial Operational Capability (IOC) by the end of FY 2023. End User Evaluations will be conducted through the end of FY 2023 to continue the refinement of the TRUAS CONOP.

Medium ULS-A is an autonomous UAS prototype that can carry a logistic payload between 300 and 600lbs to a combat radius from 25 to 100 nautical miles (NM). The system will support a logistics distribution mission at the tactical edge for resupplying forward deployed ground forces. The MAGTF and MLR require the flexibility to draw sustainment from anywhere supplies exist. Supplies moved organically through aerial capabilities offer the speed and persistence needed to maintain critical operational tempo. Medium ULS-A, complementing the capabilities of the TRUAS, provides a heavier aerial distribution capability in environments in which the risk to manned aircraft may be too great.

Two prototyping contracts awarded in 2Q FY 2023 with prototype deliveries planned for 4Q 2024. Contractor testing scheduled to complete 4Q FY 2024, with Integrated Test (IT) to complete 4Q FY 2026, followed by a Production Decision in 1Q FY2027.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Title: Unmanned Expeditionary Systems (UES)</p> <p align="right">Articles:</p> <p>FY 2023 Plans: Funding in FY 2023 is within Project Unit 4002 Family of Raid Reconnaissance.</p> <p>Continue research and development of ULS-A to include integration and development of autonomy aspects, initial development of ULS-A Medium variant prototypes, and final developments prior to initial phase of rapid fielding efforts for ULS-A Small TRUAS.</p> <p>FY 2024 Base Plans: Continue research and development of Medium ULS-A enabling technologies, and continue Medium ULS-A prototyping in support of a FUCA that is scheduled for 4Q FY 2024.</p> <p>Initiate research and development of GPS-denied and Sense and Avoid capabilities for TRUAS.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Prior to FY 2024, ULS-A was funded in Project 4002 Family of Raid Reconnaissance. The equivalent request for FY 2023 was \$16.802M. The decrease from FY 2023 to FY 2024 is due to a reduction in research and development of TRUAS Landing Zone Detection capabilities.</p>	0.000	0.000	16.039	0.000	16.039
Accomplishments/Planned Programs Subtotals	0.000	0.000	16.039	0.000	16.039

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

N/A

Remarks

D. Acquisition Strategy

The program office continues to implement acquisition approaches to quickly field new technology and capabilities to meet requirements set forth by USMC in order to meet FD2030 objectives.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems
<p>TRUAS established as an Abbreviated Acquisition Program (AAP) in accordance with Secretary of the Navy Instruction 5000.2G with a Production Decision Review planned for 2Q FY 2023, IOC in 4Q FY 2023, and FOC in 4Q FY 2028.</p> <p>Medium ULS-A is leveraging Other Transaction Authority for accelerated prototyping, continue IT through FY 2026, followed by a production decision in FY 2027.</p>		

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TRUAS, Small ULS-AIR	Various	NAVAIR : Pax River, MD	0.000	0.000		0.000		1.000	Jan 2024	-		1.000	Continuing	Continuing	Continuing
Medium ULS-AIR	Various	Various : Various	0.000	0.000		0.000		13.000	Jan 2024	-		13.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		14.000		-		14.000	Continuing	Continuing	N/A

Remarks
The increase in Medium ULS-A is to procure an additional prototype system for experimentation and further Integrated Testing.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ULS-A Support	Various	NAVAIR : Pax River, MD	0.000	0.000		0.000		1.039	Feb 2024	-		1.039	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		1.039		-		1.039	Continuing	Continuing	N/A

Remarks
The increase in ULS-A Support is to provide additional support for integration of autonomous system capabilities.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	MIPR	NAVAIR : Pax River, MD	0.000	0.000		0.000		0.500	Jan 2024	-		0.500	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	NAVAIR : Pax River, MD	0.000	0.000		0.000		0.500	Jan 2024	-		0.500	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		1.000		-		1.000	Continuing	Continuing	N/A

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
The increase from PROJ 4002, to FY 2024, PROJ 2530, is primarily due to additional APS-1 developmental testing, Drop Bag evaluations, and continued research, development, test, and evaluations associated with Medium ULS-A.

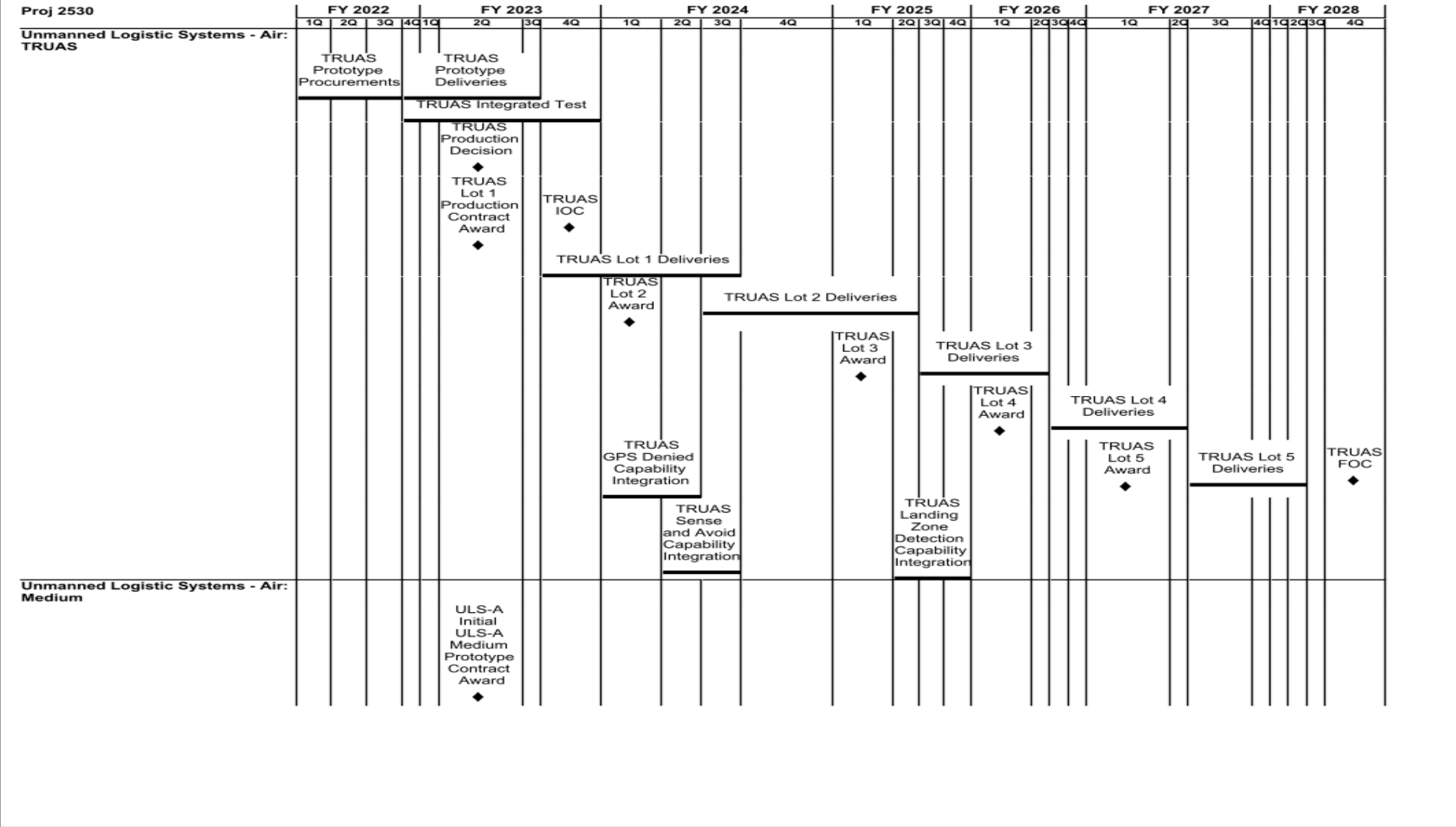
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	16.039	-	16.039	Continuing	Continuing	N/A

Remarks
Beginning in FY 2024, Unmanned Logistics System-Air (ULS-A) has been realigned from Project 4002 Family of Raid Reconnaissance to Project 2530 Unmanned Expeditionary Systems (UES). Overall decrease is primarily due to a reduction in Landing Zone Detection capability integration for ULS-A.

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

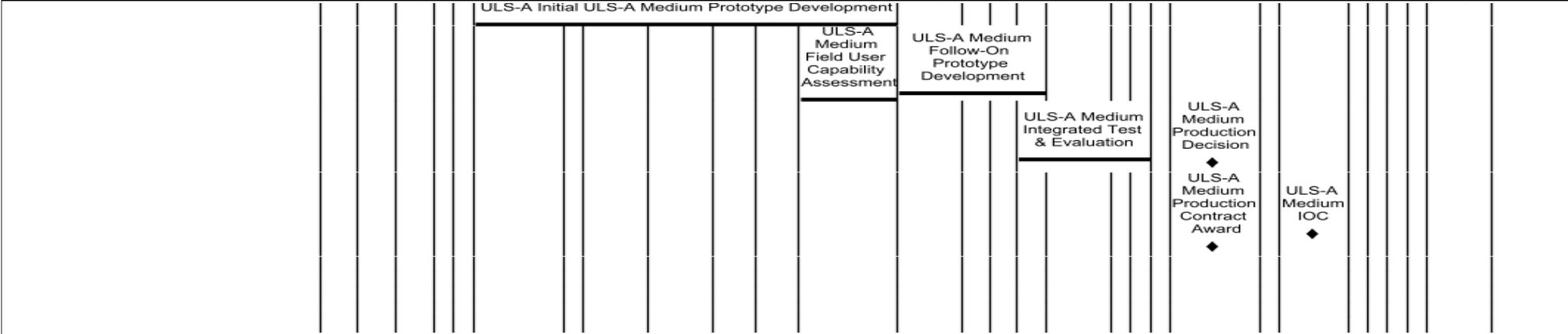
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems
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2024PB - 0206623M - 2530

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2530				
Unmanned Logistic Systems - Air: TRUAS: TRUAS Prototype Procurements	1	2022	3	2022
Unmanned Logistic Systems - Air: TRUAS: TRUAS Prototype Deliveries	4	2022	3	2023
Unmanned Logistic Systems - Air: TRUAS: TRUAS Prototype End User Evaluations	3	2022	4	2023
Unmanned Logistic Systems - Air: TRUAS: TRUAS Integrated Test	4	2022	4	2023
Unmanned Logistic Systems - Air: TRUAS: TRUAS Production Decision	2	2023	2	2023
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 1 Production Contract Award	2	2023	2	2023
Unmanned Logistic Systems - Air: TRUAS: TRUAS IOC	4	2023	4	2023
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 1 Deliveries	4	2023	3	2024
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 2 Award	1	2024	1	2024
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 2 Deliveries	3	2024	2	2025
Unmanned Logistic Systems - Air: TRUAS: TRUAS Option Lot 3 Award	1	2025	1	2025
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 3 Deliveries	3	2025	2	2026
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 4 Award	1	2026	1	2026
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 4 Deliveries	3	2026	2	2027
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 5 Award	1	2027	1	2027
Unmanned Logistic Systems - Air: TRUAS: TRUAS Lot 5 Deliveries	3	2027	2	2028
Unmanned Logistic Systems - Air: TRUAS: TRUAS FOC	4	2028	4	2028
Unmanned Logistic Systems - Air: TRUAS: TRUAS GPS Denied Capability Integration	1	2024	2	2024
Unmanned Logistic Systems - Air: TRUAS: TRUAS Sense and Avoid Capability Integration	2	2024	3	2024
Unmanned Logistic Systems - Air: TRUAS: TRUAS Landing Zone Detection Capability Integration	2	2025	4	2025

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2530 / Unmanned Expeditionary Systems
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Unmanned Logistic Systems - Air: Medium: Medium Prototype Contract Award	2	2023	2	2023
Unmanned Logistic Systems - Air: Medium: Medium Prototype Development	2	2023	4	2024
Unmanned Logistic Systems - Air: Medium: Medium Field User Capability Assessment	4	2024	4	2024
Unmanned Logistic Systems - Air: Medium: Medium Follow-On Prototype Development	1	2025	4	2025
Unmanned Logistic Systems - Air: Medium: Medium Integrated Test & Evaluation	4	2025	3	2026
Unmanned Logistic Systems - Air: Medium: Medium Production Decision	1	2027	1	2027
Unmanned Logistic Systems - Air: Medium: Medium Production Contract Award	1	2027	1	2027
Unmanned Logistic Systems - Air: Medium: Medium IOC	3	2027	3	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 2928 / Exp Indirect Fire Gen Supt Wpn Sys			
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
2928: Exp Indirect Fire Gen Supt Wpn Sys	49.497	0.494	0.512	0.521	-	0.521	0.527	0.536	0.545	0.556	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Expeditionary Indirect Fires provides the Ground Combat Element (GCE) systems needed to engage multiple enemy threats from land and sea. High Mobility Artillery Rocket Systems (HIMARS) which is a C-130 transportable, wheeled, indirect fire, rocket/missile system capable of firing all rockets and missiles in the Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM). The system includes one launcher, two Re-Supply Systems, and the MFOM. HIMARS provides the Marine Air-Ground Task Force (MAGTF) with 24 hour ground-based, responsive General Support/General Support Reinforcing (GS/GSR) indirect fires which accurately engage targets at long range (60+km), with high volumes of lethal fire under all weather conditions throughout all phases of combat operations ashore, to include irregular warfare, distributed operations and sea control. Development provides for the modernization and obsolescence mitigation of the HIMARS in order to provide improved operational capabilities. Development also provides for the qualification/certification of newly developed MFOM for shipboard transportability.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: HIMARS Expeditionary & Naval Integration Capabilities	0.494	0.512	0.521	0.000	0.521
Articles:	-	-	-	-	-
FY 2023 Plans:					
HIMARS:					
- Engineering and Integration testing of the system, radio and intercom modernization.					
- Communication modernization integration testing of fully tested software into the launcher.					
- Communication modernization integration testing of hardware components (radios, intercoms, A-kits and B-kits).					
FY 2024 Base Plans:					
HIMARS:					
- Continued Engineering and Integration testing of the system, radio and intercom modernization.					
- Electromagnetic, Environmental, Effects (E3) testing of the radio and intercom modernization.					
- Software development of MLRS Test Program Set to the current Launcher Software Suite.					
FY 2024 OCO Plans:					
N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2928 / Exp Indirect Fire Gen Supt Wpn Sys

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase of \$0.009M from FY 2023 to FY 2024 due to inflation.					
Accomplishments/Planned Programs Subtotals	0.494	0.512	0.521	0.000	0.521

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/ BLI 2212: <i>High Mobility Artillery Rocket System (HIMARS)</i>	221.347	143.808	285.025	-	285.025	279.566	322.426	227.069	231.610	61.792	2,584.882
• PMC/ BLI 3025: <i>Guided Multiple Launch Rocket System (GMLRS)</i>	76.368	7.605	8.867	-	8.867	1.575	1.800	1.836	1.873	Continuing	Continuing

Remarks

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

D. Acquisition Strategy

Engineering support will come from multiple Army and Navy labs.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2928 / Exp Indirect Fire Gen Supt Wpn Sys
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HIMARS RSS Intercom/ Radio Integration	WR	SPAWAR : Charleston	0.576	0.000		0.000		0.000		-		0.000	0.000	0.576	-
HIMARS Launcher Radio Integration	WR	PIF : Huntsville, AL	0.658	0.163	Jun 2022	0.225	Dec 2022	0.097	Dec 2023	-		0.097	0.000	1.143	-
HIMARS Engineering	WR	NSWC : Various	0.456	0.000		0.099	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
HIMARS Launcher Software	WR	S3i : Huntsville, AL	0.000	0.331	Apr 2022	0.000		0.238	Dec 2023	-		0.238	0.000	0.569	-
Prior Years Cumulative Funding	Various	Various : Various	32.890	0.000		0.000		0.000		-		0.000	0.000	32.890	-
Subtotal			34.580	0.494		0.324		0.335		-		0.335	Continuing	Continuing	N/A

Remarks
FY 2023 to FY 2024 increase reflects software development of MLRS Test Program Set.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	9.273	0.000		0.000		0.000		-		0.000	0.000	9.273	-
Developmental Test & Evaluation (DT&E)	WR	NSWC-DD : Dahlgren, VA	0.000	0.000		0.188	Jan 2023	0.186	Dec 2023	-		0.186	0.000	0.374	-
Subtotal			9.273	0.000		0.188		0.186		-		0.186	0.000	9.647	N/A

Remarks
FY 2023 to FY 2024 decrease reflects completion of HIMARS launcher communications qualification testing.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 2928 / Exp Indirect Fire Gen Supt Wpn Sys

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Exp Indirect Fire Gen Supt Wpn Sys				
HIMARS Developmental Efforts and Radio Integration: HIMARS Developmental Efforts and Radio Integration	1	2022	4	2024
HIMARS Engineering and Safety Support: HIMARS Engineering and Safety Support	1	2022	4	2025
HIMARS Qualification Testing: HIMARS Qualification Testing	2	2023	3	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 3098 / Fire Support System			
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
3098: <i>Fire Support System</i>	173.619	2.761	2.241	3.335	-	3.335	11.055	15.362	15.433	15.741	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 3098 Fire Support System funds the development of critical United States Marine Corps (USMC) key efforts: fire support coordination, targeting, and digital interoperability systems required for the employment of air and ground fires. Fire Support Systems develop and integrate a digital networked sensor to shooter kill chain supporting the Marine Air-Ground Task Force (MAGTF). Key efforts included are:

The Fire Support Mod Line (FSML) is a set of Marine Corps efforts to address critical operational and logistics deficiencies in existing, fielded fire support/weapons systems, and equipment. FSML provides technical refresh and development of target acquisition, artillery survey, meteorological systems, and fire direction control. Provides execution of product improvements/modifications and upgrades to system hardware and software for the Marine Artillery Survey Set (MASS), Modeled Meteorological Information Manager (MMIM), Global Positioning System Survey Replacement (GPS-S), Improved Position Azimuth Determining System (IPADS), and the replacement system, known as the Location Azimuth Determining System (LADS). Funding is also used for upgrades, engineering change proposals (ECPs), and modifications for fire control systems which fall within Fire Support Systems for the Marine Corps.

The Family of Artillery Munitions (FAM) seeks to provide the warfighter with the most state of the art Global Positioning System guided and ballistic 155mm projectiles. In conjunction with the Army, the Marine Corps is evaluating new munitions that are effective against individual area targets dispersed over a defined area, targets whose precise locations are not known, time-sensitive or moving targets, and massed formations of enemy forces. Funding is used to develop and mature these projectiles for the Marine Corps and includes conducting safety and engineering analysis as well as ship compatibility studies.

The Common Laser Range Finder (CLRF) is an association of targeting systems that provide handheld, lightweight, man portable devices supporting the employment of air and surface fires. They provide foot mobile users the ability to locate, identify, mark, and designate targets in both day and night conditions for engagement by fire support and weapons platforms. CLRF systems support the collection and dissemination of targeting information to maneuver, fire support, and intelligence personnel via external digital devices such as the Advanced Field Artillery Tactical Data System (AFATDS) and the Target Handoff System (THS) using associated Combat Net Radios. The CLRF includes two major components; the CLRF Integrated Capability (IC) Laser Range Finder (LRF) supports the requirement to locate and transmit targeting information, while the Next Generation Handheld Targeting System (NGHTS) combines the capabilities of the LRF with the ability to designate for specific requirements associated with laser guided munitions.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Fire Support Mods (FSM)	1.973	1.319	2.377	0.000	2.377
Articles:	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3098 / Fire Support System

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Description: Funding is used for upgrades, engineering change proposals (ECPs), and modifications to system hardware and software for the Marine Artillery Survey Set (MASS), Meteorological Information Manager (MMIM), Global Positioning System Survey Replacement (GPS-S), the Improved Position Azimuth Determining System (IPADS), and the replacement system known as the Location Azimuth Determining System (LADS), as well as technical refresh for target acquisition, and artillery survey and meteorological systems.</p> <p>FY 2023 Plans: - Initiated development and integration of LADS to the Joint Light Tactical Vehicle (JLTV).</p> <p>FY 2024 Base Plans: - Initiate the development, integration, and testing for the Helium Rack to mount in the JLTV. - Initiate the development, integration, and testing of the Electronic Mechanical Meteorological Theodolite (EMMT) to support replacement for Pilot Balloon (PIBAL). - Continue the development and integration of LADS to the JLTV.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 is primarily a result of the initiation of the development, integration, and testing of the PIBAL Helium Rack into the JLTV.</p>					
<p>Title: Family of Artillery Munitions (FAM)</p> <p align="right">Articles:</p> <p>Description: Family of Artillery Munitions (FAM) is an effort that seeks to provide the warfighter with the most state of the art Global Positioning System guided and Ballistic 155mm projectiles. In conjunction with the Army, the Marine Corps is evaluating new munitions that are effective against individual area targets dispersed over a defined area, targets whose precise locations are not known, time-sensitive or moving targets, and massed formations of enemy forces. Funding is used to develop and mature these projectiles for the Marine Corps to include conducting safety and engineering analysis as well as ship compatibility studies.</p> <p>FY 2023 Plans: - Perform HERO Tech Agent Certification and Electro Static Discharge Review for the XM1208. - Perform Safety Support and Oversight for the 12 Meter Drop Test for the XM1208.</p>	0.214 -	0.313 -	0.338 -	0.000 -	0.338 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3098 / Fire Support System

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Evaluate 12 Meter Drop Top Test for compatibility for Ship Board safety for the XM1208.</p> <p>FY 2024 Base Plans: - Perform safety confirmation of all tests to date for the XM1208.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 is a result of inflation and planned safety confirmation of all testing performed in FY 2023 on the XM1208.</p>					
<p>Title: Common Laser Range Finder (CLRF)</p> <p align="right">Articles:</p> <p>Description: The Common Laser Range Finder (CLRF) is a family of systems consisting of Common Laser Range finder Integrated Capability (CLRF IC) and the Next Generation Handheld Targeting System (NGHTS). The CLRF IC's scheduled end of life is FY30. Market Research for the CLRF IC replacement will begin in FY24. NGHTS is currently in LRIP phase and will continue until a scheduled Full-Rate production Decision in FY24. Ongoing research for M-CODE development and implementation for NGHTS is ongoing and scheduled for inclusion into the NGHTS in FY26. Modernization research efforts are ongoing for NGHTS and the CLRF IC replacement.</p> <p>FY 2023 Plans: - Conduct NGHTS Operational Testing and an OT Report.</p> <p>FY 2024 Base Plans: - NGHTS: Conduct M-CODE Research. - CLRF IC: Initiate Market Research for CLRF IC replacement.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The increase from FY 2023 to FY 2024 is due to scope increase of M-CODE development.</p>	0.574 -	0.609 -	0.620 -	0.000 -	0.620 -
Accomplishments/Planned Programs Subtotals	2.761	2.241	3.335	0.000	3.335

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3098 / Fire Support System

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC/4733: <i>Fire Support Mods</i>	7.575	4.646	4.747	-	4.747	4.830	4.924	5.020	5.121	Continuing	Continuing
• PMC/4733/: <i>Common Laser Range Finder (CLRF)</i>	16.842	22.865	32.360	-	32.360	32.577	33.292	33.957	34.636	Continuing	Continuing

Remarks

D. Acquisition Strategy

These programs range from off-the-shelf modifications to developmental items. Development will typically be conducted at government labs.

Fire Support Mod Line (FSML):

Leverage acquisition efforts in conjunction with the Army, Warfare Centers and labs for existing fielded systems. Continue efforts between the Army's Combat Capabilities Development Command - Armaments Center (CCDC-AC), and NSWC Dahlgren for the Future Survey System replacement. Procure hardware and software refreshes for the GPSS, MASS, and MMIM to ensure compliance with cybersecurity policies and address obsolescence and interoperability with other C2 systems.

Family of Artillery Munitions (FAM):

Program includes artillery munitions which are being developed by the Army. The Army is the lead service for these programs but continues to interact with the FAM IPT to ensure USMC requirements and capability needs are met. This allows the USMC to become users of the munition and certify the round for naval transportation. The munitions include, but are not limited to, Dual Purpose Improved Conventional Munitions (DPICM) replacement, Precision Guidance Kit (PGK), and 155mm rounds. USMC engineering efforts are conducted primarily at Navy Warfare Centers.

Common Laser Range Finder (CLRF):

The Next Generation Handheld Targeting System (NGHTS) was developed by using competitively awarded Other Transaction Agreements (OTA) for a phased approach that resulted in a competitive down select to a single vendor. Procurement contract was awarded to support Low Rate Initial Production, Production Verification Testing, and Full Rate Production of the NGHTS Approved Acquisition Objective quantity of systems and provided initial training and maintenance support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys					Project (Number/Name) 3098 / Fire Support System				

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FSML: LADS Development	MIPR	CCDC : Picatinny, NJ	6.024	1.493	Mar 2022	0.000		0.000		-		0.000	0.000	7.517	-
FSML: MASS Android Sensor Software Development	MIPR	CCDC : Picatinny, NJ	0.242	0.150	Mar 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
FSML: LADS/JLTV Integration	MIPR	CCDC : Picatinny, NJ	0.000	0.000		1.165	Nov 2022	0.250	Nov 2023	-		0.250	0.000	1.415	-
FSML: Helium Rack Development and Integration	MIPR	LOGCOM : Albany, GA	0.000	0.000		0.000		0.934	Apr 2024	-		0.934	0.000	0.934	-
CLRF: NGHTS	C/FFP	NSWC : Dahlgren, VA	12.965	0.400	Nov 2021	0.050	Nov 2022	0.060	Nov 2023	-		0.060	0.000	13.475	-
Prior Years Cumulative Funding	Various	Various : Various	136.446	0.000		0.000		0.000		-		0.000	0.000	136.446	-
Subtotal			155.677	2.043		1.215		1.244		-		1.244	Continuing	Continuing	N/A

Remarks
 CLRF: Net increase from FY 2023 to FY 2024 is due to scope increase of M-CODE development support.
 FSML - Net increase from FY 2023 to FY 2024 is a result of the initiation of the PIBAL Helium Rack Development.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FAM: Program Mgt Support	SS/FFP	MCSC : Various	0.200	0.000		0.108	Mar 2023	0.000		-		0.000	0.000	0.308	-
FAM: Safety Engineer Support	SS/FFP	NSWC : Indian Head, MD	0.180	0.211	Jan 2022	0.168	Dec 2022	0.338	Dec 2023	-		0.338	0.000	0.897	-
FSML: Engineering Support	WR	NSWC : Dahlgren, VA	0.378	0.225	Mar 2022	0.154	Nov 2022	0.273	Nov 2023	-		0.273	0.000	1.030	-
FSML: Engineering Support	C/FFP	MCSC : Quantico, VA	0.000	0.000		0.000		0.244	Mar 2024	-		0.244	0.000	0.244	-

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3098 / Fire Support System
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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CLRF: CLRF IC	WR	NSWC : Dahlgren, VA	0.450	0.045	Nov 2021	0.059	Nov 2022	0.201	Nov 2023	-		0.201	0.000	0.755	-
Prior Years Cumulative Funding	Various	Various : Various	6.677	0.000		0.000		0.000		-		0.000	0.000	6.677	-
Subtotal			7.885	0.481		0.489		1.056		-		1.056	0.000	9.911	N/A

Remarks
 CLRF - Net increase from FY 2023 to FY 2024 is support of Market Research for CLRF IC replacement.
 FAM - Net increase from FY 2023 to FY 2024 is a result of inflation and expected costs of planned safety confirmation of all testing performed in FY 2023 on the XM1208.
 FSML - Net increase from FY 2023 to FY 2024 is a result of the increased engineering support required for the initiation of the PIBAL Helium Rack Development and Integration and the EMMT Integration and Testing.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	Various	Various : Various	0.000	0.108	Nov 2022	0.037	Nov 2022	0.000		-		0.000	0.000	0.145	-
Operational Test & Evaluation (OT&E)	Various	Various : Various	0.000	0.000		0.000		0.676	Apr 2024	-		0.676	0.000	0.676	-
Operational Test & Evaluation (OT&E)	WR	NSWC : Dahlgren, VA	0.291	0.129	Nov 2021	0.500	Nov 2022	0.359	Nov 2023	-		0.359	0.000	1.279	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	9.766	0.000		0.000		0.000		-		0.000	0.000	9.766	-
Subtotal			10.057	0.237		0.537		1.035		-		1.035	0.000	11.866	N/A

Remarks
 CLRF - Net decrease from FY 2023 to FY 2024 is a result of completion of NGHTS OT.
 FAM - Net decrease from FY 2023 to FY 2024 is a result of the completion of XM1208 Testing Evaluations.
 FSML - Net increase from FY 2023 to FY 2024 is a result of the initiation of EMMT Integration and Testing.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy								Date: March 2023					
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 3098 / Fire Support System					
	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	173.619	2.761		2.241		3.335		-		3.335	Continuing	Continuing	N/A

Remarks
Overall increase is primarily attributed to the initiation of EMMT Integration and Testing, initiation of the PIBAL Helium Rack Development and Integration, and efforts associated with CLRF IC replacement.

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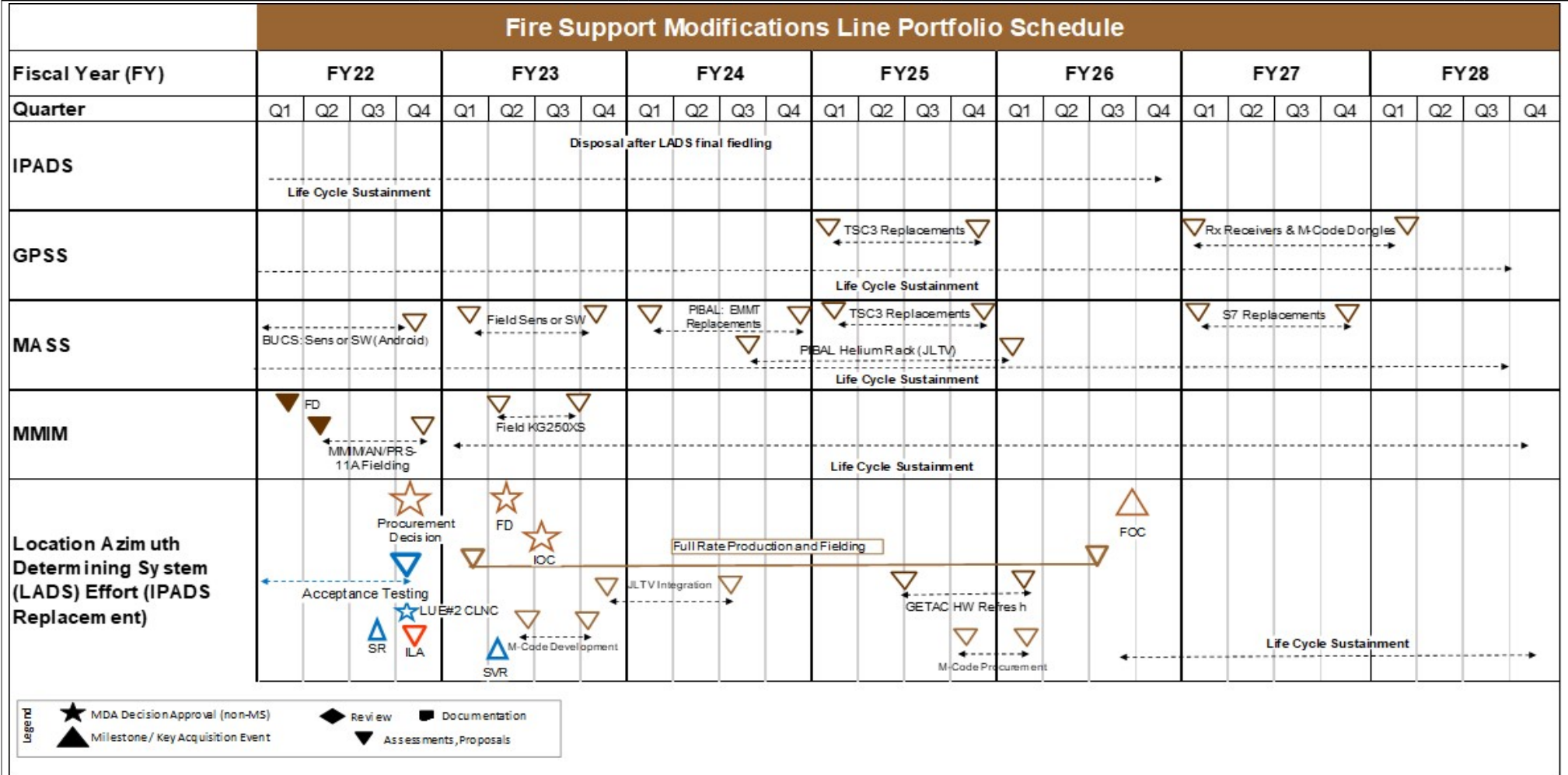
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206623M / MC Ground Cmbt Spt Arms
Sys

Project (Number/Name)
3098 / Fire Support System



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3098 / Fire Support System

Common Laser Range Finder Integrate Capability (CLRF-IC) Program Schedule																																
Operations and Support																																
Fiscal Year	FY22				FY23				FY24				FY25				FY26				FY27				FY28							
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Acquisition/Milestone Events	LOGCOM (LIS) Life Cycle Sustainment																								Disposal FY30							
Capabilities/Requirements	ELRF Solar		ECP Retrofit																													
Systems Engineering																																
Logistics	WMM Coefficient Org Level Update																															
Major Contract Events																																
Test and Evaluation																																
Cost																																
Cybersecurity																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3098 / Fire Support System

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3098				
FAM: Validation / Verification Accreditation Report	2	2024	2	2024
FAM: Safety Confirmation	4	2024	4	2024
FSML: PIBAL Helium Rack Development, Integration, and Testing for the JLTV	3	2024	1	2026
FSML: EMMT Integration and Testing	1	2024	4	2024
CLRF: NGHTS LRIP PVT	3	2023	4	2023
CLRF: NGHTS OT&E	4	2023	1	2024
CLRF: CLRF IC Replacement Market Research	1	2024	4	2024
CLRF: CLRF IC Test and Evaluation	3	2024	2	2025

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3774 / Marine Corps Ammo
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3774: Marine Corps Ammo	4.001	10.084	10.724	5.100	-	5.100	4.947	4.220	2.763	2.818	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Ammunition Life Cycle Management (ALCM) Program supports PM Ammo's responsibility for total life cycle management for ground conventional munitions. Ammunition logistics R&D projects are designed to extend the shelf life of our current inventory, provide enhanced packaging to "lighten the load" of our munitions, and the modification of ammunition related systems to increase reliability and performance.

Conventional Ground Ammunition (CGA) is a project that identifies and develops Insensitive Munitions (IM) technologies to address IM shortfalls in new Marine Corps development or improvements to legacy CGA to meet OSD mandated IM compliance requirements. These IM technology investments directly support the development of the bi-annual Marine Corps Insensitive Munitions Strategic Plan to address the identified IM technology needs of the Marine Corps.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Ammunition Life Cycle Management	9.552	10.177	4.618	0.000	4.618
Articles:	-	-	-	-	-
Description: RDT&E funds are required to seek a prototype for the ammunition inventory management system consisting of commercially available software solution(s) with minimal customization to fully track, account, audit, and manage the supply and distribution of Class V munitions worldwide. Additionally, RDT&E funds are required to support ammunition packaging efforts to "lighten the load" for ammunition packaging. Lastly, this funding line supports modernization efforts for multiple applications within the MAKE to enhance functionality/capability and comply with Financial Improvement and Audit Readiness (FIAR) standards.					
FY 2023 Plans:					
- Support multiple ammunition packaging efforts to lighten the packaging for small arms munitions and pyrotechnics/grenades. This will save the Services hundreds of thousands of dollars in transportation costs and enhance operational capabilities by enabling more ammo to be distributed via unmanned air systems.					
- Support modernization efforts for multiple applications within the Marine Ammunition Knowledge Management Enterprise (MAKE) to enhance functionality/capability and comply with FIAR standards.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3774 / Marine Corps Ammo

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Support R&D of the Mk22 Mod 4 (J143) Rocket Motor to address safety concerns identified during a recent mishap and improve insensitive munitions performance (2nd year of a 3 year project).</p> <p>FY 2024 Base Plans:</p> <p>- Support modernization efforts for multiple applications within the MAKE to enhance functionality/capability and comply with FIAR standards.</p> <p>- Support R&D of the Mk22 Mod 4 (J143) Rocket Motor to address safety concerns identified during a recent mishap and improve insensitive munitions performance (3rd year of a 3 year project).</p> <p>FY 2024 OCO Plans:</p> <p>N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>The decrease from FY 2023 to FY 2024 is due to the reduction of ammunition packaging efforts in FY 2024.</p>					
<p>Title: Conventional Ground Ammunition</p> <p align="right">Articles:</p>	0.532	0.547	0.482	0.000	0.482
<p>FY 2023 Plans:</p> <p>- Continuing the J143 Rocket Motor slow cook-off mitigation development design package to a final TDP to include non-flammable container and systems level testing.</p> <p>- Continuing LAW FFE particle impact mitigation sleeve development design package to a final TDP to include an ECP.</p> <p>- Annual testing for new tools and techniques for EOD of IM - UXO applications.</p> <p>FY 2024 Base Plans:</p> <p>- Completing the J143 Rocket Motor slow cook-off mitigation development design package to a final TDP to include non-flammable container and systems level testing. This is the last year of a three year project.</p> <p>- Continuing LAW FFE particle impact mitigation sleeve development design package to a final TDP to include ECP.</p>	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3774 / Marine Corps Ammo

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Annual testing for new tools and techniques for Explosive Ordnance Disposal (EOD) of Insensitive Munitions (IM) - Unexploded Ordnance (UXO) applications.					
- Develop the bi-annual Marine Corps Insensitive Munitions Strategic Plan (IMSP) to address the identified IM technology needs of the Marine Corps.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: The decrease from FY 2023 to FY 2024 is due to reduced annual testing for new EOD tools and techniques.					
Accomplishments/Planned Programs Subtotals	10.084	10.724	5.100	0.000	5.100

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PANMC/1085: Mortars	41.228	62.713	61.274	-	61.274	108.900	93.868	103.416	113.253	Continuing	Continuing
• PANMC/1125: Direct Support Munitions	132.712	52.241	73.338	-	73.338	55.301	62.959	87.441	61.231	Continuing	Continuing
• PANMC/1350: Infantry Weapons Ammunition	68.955	161.803	178.240	-	178.240	306.232	275.097	298.094	293.362	Continuing	Continuing
• PANMC/1550: Combat Support Munitions	28.362	19.691	15.897	-	15.897	15.406	16.101	16.400	22.034	Continuing	Continuing
• PANMC/1630: Ammo Modernization	16.727	17.327	17.941	-	17.941	18.166	18.492	18.919	19.300	Continuing	Continuing
• PANMC/1650: Artillery Munitions	97.048	15.514	82.452	-	82.452	124.502	119.837	141.362	169.772	Continuing	Continuing
• PANMC/1660: Items less than \$5 million	4.108	5.476	5.340	-	5.340	5.438	5.537	5.665	5.778	Continuing	Continuing

Remarks

D. Acquisition Strategy
Non Developmental Item/Commercial off the Shelf (NDI/COTS).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys					Project (Number/Name) 3774 / Marine Corps Ammo				

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Ammunition Life Cycle Management	MIPR	DEVCOM : Picatinny, NJ	2.318	0.617	Feb 2022	1.099	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Ammunition Life Cycle Management	MIPR	NSWC IHEODTD : Indian Head, MD	0.000	5.377	Dec 2022	4.750	Oct 2022	4.618	Oct 2023	-		4.618	0.000	14.745	-
Ammunition Life Cycle Management	MIPR	NSWC Corona : Norco, CA	0.154	3.428	Jun 2022	4.875	Oct 2022	0.000		-		0.000	0.000	8.457	-
Ammunition Life Cycle Management	MIPR	NRL : Washington, DC	0.000	0.130	May 2022	0.000		0.000		-		0.000	0.000	0.130	-
Conventional Ground Ammunition	MIPR	NSWC IHEODTD : Indian Head, MD	0.949	0.000		0.000		0.482	Oct 2023	-		0.482	Continuing	Continuing	Continuing
Conventional Ground Ammunition	MIPR	DEVCOM : Picatinny NJ	0.580	0.517	May 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Conventional Ground Ammunition	MIPR	NSWC Dahlgren : Dahlgren, VA	0.000	0.015	Mar 2022	0.000		0.000		-		0.000	0.000	0.015	-
Subtotal			4.001	10.084		10.724		5.100		-		5.100	Continuing	Continuing	N/A

Remarks
The decrease from FY 2023 to FY 2024 is due to reduced ammunition packaging efforts during FY 2024 and reduced annual testing for new EOD tools and techniques.

	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	4.001	10.084	10.724	5.100	-	5.100	Continuing	Continuing	N/A

Remarks

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3774 / Marine Corps Ammo
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Project 3774	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028													
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q										
J143 Rocket Motor																																						
Initial Proof of Concept (End with a PDR)																																						
Ammunition Life Cycle Management - no major milestones																																						

2024OSD - 0206623M - 3774

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3774 / Marine Corps Ammo

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Project 3774				
J143 Rocket Motor: Initial Proof of Concept (End with a PDR): Schedule Detail	1	2022	4	2024
Ammunition Life Cycle Management - no major milestones: Schedule Detail	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 3775 / Family of Internally Transportable Vehicles (FITV)			
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
3775: Family of Internally Transportable Vehicles (FITV)	5.266	0.871	0.000	0.383	-	0.383	0.340	0.252	0.257	0.262	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Family of Ultra-light Tactical Vehicles (FULTV), which consists of the Utility Task Vehicle (UTV) and its replacement the Ultra-light Tactical Vehicle (ULTV), provides operational capabilities for infantry logistics, long- range surveillance, and reconnaissance missions in support of distributed heliborne operations. The lightweight vehicles provide units with increased logistics support while reducing the combat load burden on the individual Marine, as well as providing casualty evacuation for wounded Marines. The vehicles are transportable in the MV-22/CV-22 tilt rotary wing aircraft, CH-53E/ CH-53K rotary wings aircraft, and all fixed wing aircrafts. The FULTV vehicles mitigate the infantry units, reconnaissance battalions, and wing support squadrons mobility capability gaps, with the ability to operate in remote regions where currently fielded ground mobility platforms may be unsuitable due to size, weight, and transportability concerns.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Family of Ultra-light Tactical Vehicles (ULTV) Test and Evaluation	0.871	0.000	0.383	0.000	0.383
Articles:	-	-	-	-	-
FY 2023 Plans: N/A					
FY 2024 Base Plans: Conduct necessary testing to address post production engineering change proposals (ECPs).					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 supports development and testing of post-production ECPs (i.e. Exportable High Power ECP).					
Accomplishments/Planned Programs Subtotals	0.871	0.000	0.383	0.000	0.383

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3775 / Family of Internally Transportable Vehicles (FITV)

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• PMC/6545: <i>Ultra-light Tactical Vehicles (ULTV)</i>	15.439	15.033	17.034	-	17.034	20.191	21.134	27.034	27.574	0.000	256.956

Remarks

D. Acquisition Strategy

The strategy for the ULTV program is a partnership with Program Manager Family of Special Operations Vehicles (PM FOSOV) for testing and procurement. The partnership will capitalize on similar performance and testing specifications and generate efficiencies by conducting a cross-services acquisition. PM FOSOV released a full and open competitive solicitation and awarded an IDIQ contract 29 May 2020. The Marine Corps and PM FOSOV conducted joint testing including safety, performance, transportability, and durability. The Marine Corps completed an Operational Assessment in August 2021. The ULTV program has a planned Full Rate Production decision in 3Q FY 2023.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3775 / Family of Internally Transportable Vehicles (FITV)
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	C/CPFF	NATC : Carson City, NV	2.370	0.330	Jul 2022	0.000		0.383	Jul 2024	-		0.383	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	TBD	MCOTEA : Corona, CA	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Developmental Test & Evaluation (DT&E)	Various	Various : Varios	2.646	0.000		0.000		0.000		-		0.000	0.000	2.646	-
Developmental Test & Evaluation (DT&E)	C/CPFF	Polaris : Wyoming. MN	0.000	0.541	Jul 2022	0.000		0.000		-		0.000	0.000	0.541	-
Subtotal			5.266	0.871		0.000		0.383		-		0.383	Continuing	Continuing	N/A

Remarks
Increase from FY 2023 to FY 2024 supports development and testing of post-production ECPs.

	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	5.266	0.871	0.000	0.383	-	0.383	Continuing	Continuing	N/A

Remarks

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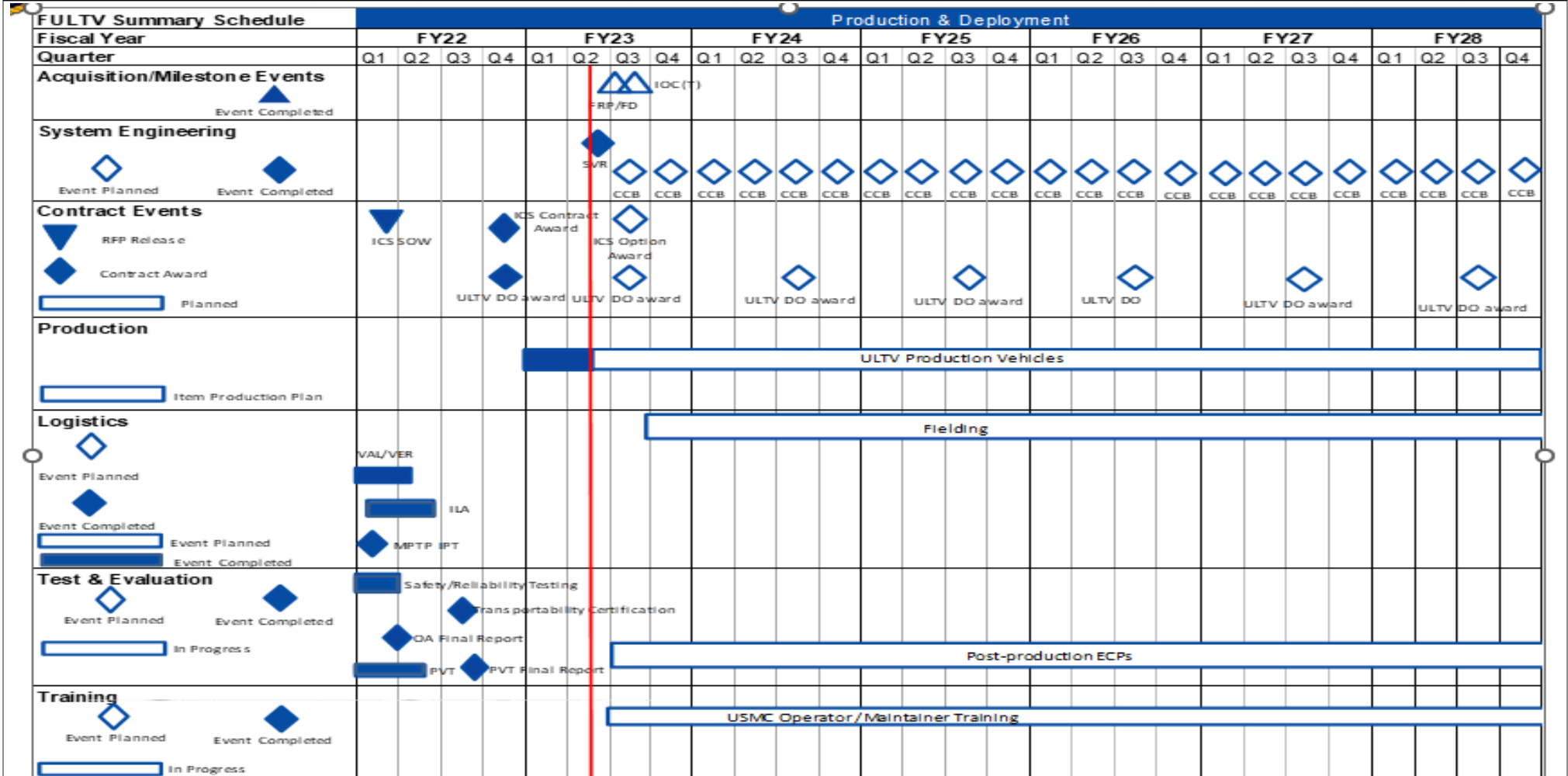
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206623M / MC Ground Cmbt Spt Arms
Sys

Project (Number/Name)
3775 / Family of Internally Transportable
Vehicles (FITV)



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 3775 / Family of Internally Transportable Vehicles (FITV)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3775				
Proj 3775: ULTV Vehicle Production Award	4	2022	4	2022
Proj 3775: System Verification Review (SVR)	2	2023	2	2023
Proj 3775: ULTV Full Rate Production (FRP)	3	2023	3	2023
Proj 3775: ULTV IOC	3	2023	3	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys				Project (Number/Name) 4002 / Family of Raid Reconnaissance			
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
4002: <i>Family of Raid Reconnaissance</i>	13.420	12.652	17.673	1.868	-	1.868	1.526	1.456	1.485	1.514	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project supports multiple airborne/parachuting and specialized reconnaissance related programs focusing on immediate capability enhancements for numerous insertion and personnel equipment shortfalls currently within Marine Reconnaissance and Marine Raider units. These enhancements will improve airborne and amphibious capability, equipment and items for direct action missions, and specialized raid equipment. The project supports rapid fielding efforts for Integration and Logistics advocated autonomous small Unmanned Logistics System-Air (ULS-A), known as Tactical Resupply Unmanned Aircraft System (TRUAS), in support of Ground Combat Element (GCE) and Logistics Combat Element (LCE) aerial resupply requirements. Additionally, project supports development of autonomy and other enabling technologies for use across the ULS-A systems and development of a medium ULS-A aircraft.

Beginning in FY 2024, Unmanned Logistics System-Air (ULS-A) has been realigned from Project Unit 4002 Family of Raid Reconnaissance to Project Unit 2530 Unmanned Expeditionary Systems (UES).

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Airborne Reconnaissance Equipment (ARE)	0.325	0.347	0.455	0.000	0.455
Articles:	-	-	-	-	-
FY 2023 Plans:					
- Continue testing and evaluation of the HAHONAV and parachutist drop bag in an operational environment with current parachute systems, utilizing East Coast Blade Hours (ECBH) facilities.					
- Continue research and development testing of parachuting capabilities for accessing the battlespace, including High Altitude Low Opening, Low Altitude Personnel Parachutes, and related ancillary items, utilizing ECBH facilities.					
- Continue development of a replacement for the MC-6 low level parachute system in concert with Navy Advanced Low-Level Parachute System.					
- Continue testing and development for Augmented Parachute System-1 with the Navy's increased capability Powered Paraglider.					
- Continue evaluation of the Advanced Parachute System 1 (APS-1) to support Force Design 2030 initiative.					
FY 2024 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 4002 / Family of Raid Reconnaissance

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> - Continue testing and evaluation of the HAHONAV and parachutist drop bag in an operational environment with current parachute systems, utilizing East Coast Blade Hours (ECBH) facilities. - Continue research and development testing of parachuting capabilities for accessing the battlespace, including High Altitude Low Opening, Low Altitude Personnel Parachutes, and related ancillary items, utilizing ECBH facilities. - Continue development of a replacement for the MC-6 low level parachute system in concert with Navy Advanced Low-Level Parachute System. - Continue testing and development for Augmented Parachute System-1 with the Navy's increased capability Powered Paraglider. - Continue evaluation of the Advanced Parachute System 1 (APS-1) to support Force Design 2030 initiative. - Initiate Parachute Drop Bag suitable substitute evaluations and training. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The increase from FY 2023 to FY 2024 of \$0.108M reflects additional APS-1 developmental testing, which includes prototype procurement in order to conduct various mission profiles, and Drop Bag evaluations.</p>					
<p>Title: Amphibious Reconnaissance Capability</p> <p align="right">Articles:</p>	0.213	0.124	0.272	0.000	0.272
<p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Initiate market research and developmental efforts for the E-CRRC Non Gasoline Burning Outboard Engine (NBOE) in support of fielding in FY 2025. <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Continue research and developmental efforts for the E-CRRC Non Gasoline Burning Outboard Engine (NBOE) in support of fielding in FY 2025. - Initiate Enhanced-Diver Propulsion Device (E-DPD) battery testing to include certification for shipboard carry and operational utilization. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 4002 / Family of Raid Reconnaissance

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
The increase from FY 2023 to FY 2024 of \$0.148M reflects continued Non-Gasoline Burning Outboard Engine (NBOE) development, with specific emphasis on 4 stroke engines, and EDPD battery development.					
Title: Aerial Delivery and Autonomous Distribution Entry <div align="right">Articles:</div>	1.365	0.400	1.141	0.000	1.141
FY 2023 Plans: - Continue JPADS and HALO GPS denied research and development to enhance accuracy of navigation in GPS denied environments to facilitate interoperability with personnel parachuting. Ensure modularity and integration within aerial delivery systems and critical capabilities such as tracking and programming. - Complete research and development of AAIRDUCT in conjunction with Army CCDC Soldier Center. FY 2024 Base Plans: - Continue JPADS and HALO GPS denied research and development to enhance accuracy of navigation in GPS denied environments to facilitate interoperability with personnel parachuting. Ensure modularity and integration within aerial delivery systems and critical capabilities such as tracking and programming. - Initiation of market research and development of Unmanned Gliders for Long Range Resupply initiative. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: The increase from FY 2023 to FY 2024 OF \$0.741M reflects the introduction of Unmanned Gliders for Long Range Resupply initiative, High Altitude Low Opening (HALO), and related Engineering Services.	-	-	-	-	-
Title: Unmanned Logistics Systems - Air <div align="right">Articles:</div>	10.749	16.802	0.000	0.000	0.000
FY 2023 Plans: - Continue research and development of ULS-A to include integration and development of autonomy aspects, initial development of Medium variant prototypes of ULS-A, and final developments prior to initial phase of rapid fielding efforts for TRUAS, the Small variant of ULS-A. FY 2024 Base Plans: Beginning in FY 2024, Unmanned Logistics System-Air (ULS-A) has been realigned from Project Unit 4002 Family of Raid Reconnaissance to Project Unit 2530 Unmanned Expeditionary Systems (UES). FY 2024 OCO Plans:	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy	Date: March 2023
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Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / MC Ground Cmbt Spt Arms Sys	Project (Number/Name) 4002 / Family of Raid Reconnaissance
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 of \$16.802 is due to Unmanned Logistics System-Air (ULS-A) has been realigned from Project Unit 4002 Family of Raid Reconnaissance to Project Unit 2530 Unmanned Expeditionary Systems (UES) beginning in FY 2024.					
Accomplishments/Planned Programs Subtotals	12.652	17.673	1.868	0.000	1.868

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/6518: Amphibious Support Equipment	12.319	34.920	15.691	-	15.691	11.817	14.265	27.621	15.731	3.654	341.152
• PMC/4758: Unmanned Expeditionary Systems	0.000	0.000	13.564	-	13.564	16.367	8.792	8.944	9.123	Continuing	Continuing
• 0206623M/2530: Unmanned Expeditionary Systems	0.000	0.000	12.939	-	12.939	11.339	10.949	10.282	8.673	Continuing	Continuing

Remarks

D. Acquisition Strategy
The Family of Raid Reconnaissance partners with government R&D entities throughout the DoD to facilitate collaborative developmental efforts, mitigate redundancy, and ensure component cost savings. Collaborative DoD research and development supports enterprise fielding, minimizes future engineering changes, and upgrades for Service wide reconnaissance equipment. Further, collective DoD efforts ensure scalable and flexible transportation (delivery, transfer, and retrograde) of all classes of supply (I-IX) across the range of military operations. The ULS-A program continues to implement acquisition approaches to quickly field new technology and capabilities to meet requirements set forth by USMC in order to meet FD2030 objectives.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 7				PE 0206623M / MC Ground Cmbt Spt Arms Sys				4002 / Family of Raid Reconnaissance							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ARC, NBOE	MIPR	CCD : Norfolk, VA	0.000	0.000		0.124	Jan 2023	0.200	Jan 2024	-		0.200	0.000	0.324	-
ADAD, JPADS Block Upgrades	MIPR	CCDC : Natick, MA	0.299	0.000		0.300	Jan 2023	0.270	Jan 2024	-		0.270	0.000	0.869	-
ADAD, Auto Aerial Insert Duct	MIPR	Army : CCDC	0.000	0.500	Feb 2022	0.000		0.000		-		0.000	0.000	0.500	-
ADAD, HALO	Various	MCSC : Quantico, VA	0.000	0.450	Feb 2022	0.000		0.230	Jan 2024	-		0.230	0.000	0.680	-
ADAD, Long Range Resupply	MIPR	CCDC : Natick	0.000	0.000		0.000		0.341	Feb 2024	-		0.341	0.000	0.341	-
TRUAS, Small ULS-AIR	Various	NAVAIR : Pax River, MD	3.522	6.491	May 2022	2.419	Jan 2023	0.000		-		0.000	0.000	12.432	-
Medium ULS-AIR	Various	Various : Various	2.375	1.400	Apr 2022	11.150	Jun 2023	0.000		-		0.000	0.000	14.925	-
Prior Year Cumulative	Various	Various : Various	1.182	0.000		0.000		0.000		-		0.000	0.000	1.182	-
Subtotal			7.378	8.841		13.993		1.041		-		1.041	0.000	31.253	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ARE, Sys Eng Support	C/FFP	MCSC : Quantico, VA	0.797	0.033	Jan 2022	0.031	Jan 2023	0.050	Jan 2024	-		0.050	Continuing	Continuing	Continuing
ARC, E-DPD	Various	MCSC : Quantico, VA	0.066	0.193	Jun 2022	0.000		0.072	Dec 2023	-		0.072	0.000	0.331	-
ULS-A Support	Various	NAVAIR : Pax River, MD	0.450	2.573	Apr 2022	2.683	Apr 2023	0.000		-		0.000	0.000	5.706	-
ADAD Eng Services	C/FFP	Skylla : Stafford, Va	0.000	0.000		0.000		0.300	Mar 2024	-		0.300	0.000	0.300	-
Prior Year Cumulative	Various	Various : Various	1.232	0.000		0.000		0.000		-		0.000	0.000	1.232	-
Subtotal			2.545	2.799		2.714		0.422		-		0.422	Continuing	Continuing	N/A

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

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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Test & Evaluation (OT&E)	Various	MCSC : Quantico, VA	0.589	0.207	Dec 2021	0.316	Jan 2023	0.369	Jan 2024	-		0.369	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	MIPR	NAS : Pax River	0.085	0.085	Dec 2021	0.000		0.036	Dec 2023	-		0.036	0.000	0.206	-
Operational Test & Evaluation (OT&E)	Various	Various : Quantico, VA	0.138	0.020	Feb 2022	0.000		0.000		-		0.000	0.000	0.158	-
Operational Test & Evaluation (OT&E)	MIPR	NRSDEC : Natick	0.366	0.415	Feb 2022	0.000		0.000		-		0.000	0.000	0.781	-
Developmental Test & Evaluation (DT&E)	MIPR	Yuma Prov G : Yuma, AZ	0.000	0.000		0.100	Jan 2023	0.000		-		0.000	0.000	0.100	-
Developmental Test & Evaluation (DT&E)	Various	NAVAIR : Pax River, MD	0.646	0.285	Aug 2022	0.550	Mar 2023	0.000		-		0.000	0.000	1.481	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	Various	Various : Various	1.673	0.000		0.000		0.000		-		0.000	0.000	1.673	-
Subtotal			3.497	1.012		0.966		0.405		-		0.405	Continuing	Continuing	N/A
Project Cost Totals			13.420	12.652		17.673		1.868		-		1.868	Continuing	Continuing	N/A

Remarks
Overall decrease of \$15.805M is primarily due to beginning in FY 2024, Unmanned Logistics System-Air (ULS-A) has been realigned from Project Unit 4002 Family of Raid Reconnaissance to Project Unit 2530 Unmanned Expeditionary Systems (UES).

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

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ARC	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Amphibious Reconnaissance	E-DPD Milestone C ◆																															
	E-CRRC Development																															
	Amphib Capabilities RDTE																															
	E-CRRC FAT				E-CRRC IOC ◆																											

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ARE				
AIR Reconnaissance: Air Recon: HAHONAV	1	2022	2	2024
AIR Reconnaissance: Augmented Parachute System-1	2	2022	4	2023
ARC				
Amphibious Reconnaissance: E-DPD Milestone C	1	2022	1	2022
Amphibious Reconnaissance: Enhanced Combat Rubber Reconnaissance Craft Development	1	2022	3	2022
Amphibious Reconnaissance: Amphibious Capabilities R&D	1	2022	4	2026
Amphibious Reconnaissance: E-CRRC FAT	2	2022	3	2022
Amphibious Reconnaissance: E-CRRC IOC	1	2023	1	2023
ADAD				
Aerial Delivery and Autonomous Distribution Entry: ADAD: JPADS Block Upgrades	1	2022	1	2025
Aerial Delivery and Autonomous Distribution Entry: Parachute Capabilities R&D	1	2022	4	2026
Aerial Delivery and Autonomous Distribution Entry: ADAD Low Level Release	2	2023	2	2025
ULS-A				
TRUAS: TRUAS Prototype Procurements	1	2022	3	2022
TRUAS: TRUAS Prototype Deliveries	4	2022	3	2023
TRUAS: TRUAS Integrated Test	4	2022	4	2023
TRUAS: TRUAS Production Decision	1	2023	1	2023
TRUAS: TRUAS Lot 1 Production Contract Award	2	2023	2	2023
TRUAS: TRUAS IOC	4	2023	4	2023
TRUAS: TRUAS Lot 1 Deliveries	4	2023	3	2024

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

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
TRUAS: TRUAS Lot 2 Award	1	2024	1	2024
TRUAS: TRUAS Lot 2 Deliveries	3	2024	2	2025
TRUAS: TRUAS Lot 3 Award	1	2025	1	2025
TRUAS: TRUAS Lot 3 Deliveries	3	2025	2	2026
TRUAS: TRUAS Lot 4 Award	1	2026	1	2026
TRUAS: TRUAS Lot 4 Deliveries	3	2026	2	2027
TRUAS: TRUAS Lot 5 Award	1	2027	1	2027
TRUAS: TRUAS Lot 5 Deliveries	3	2027	2	2028
TRUAS: TRUAS FOC	4	2028	4	2028
TRUAS: TRUAS GPS Denied Capability Integration	1	2024	2	2024
TRUAS: TRUAS Sense and Avoid Capability Integration	2	2024	3	2024
TRUAS: TRUAS Landing Zone Detection Capability Integration	2	2025	4	2025
Medium: Medium Prototype Contract Award	2	2023	2	2023
Medium: Medium Prototype Development	2	2023	1	2025
Medium: Medium Field User Capability Assessment	4	2024	1	2025
Medium: Medium Developmental Test & Evaluation	1	2024	4	2024
Medium: Medium Operational Test & Evaluation	4	2024	1	2025
Medium: Medium Production Decision	2	2025	2	2025
Medium: Medium Production Contract Award	1	2026	1	2026
Medium: Medium IOC	3	2026	3	2026
Medium: Medium Production Lot 1 Deliveries	3	2026	2	2027
Medium: Medium Production Lot 2 Award	1	2027	1	2027
Medium: Medium Production Lot 2 Deliveries	1	2028	4	2028
Medium: Medium Production Lot 3 Award	1	2028	1	2028

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

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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	0.000	0.000	5.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.500
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Add funding for the Integrated Helmet System (IHS) provides research and development focused on ballistic and blunt impact protection, allows the Marine Corps to expand the scope of test and evaluation, and provides statistically significant data in support of the business case analysis and refinement of program requirements. The major focus area of this additional funding is to purchase additional helmets from each vendor to expand the sample size of the test and evaluation to assess durability, sustainability, and maintainability of the helmets through field exercises and training events at the infantry battalions. This increase in scope enables evaluation of integration with existing communications systems on vehicle platforms, hearing enhancement device integration, performance in various environments, and integration with associated equipment and tactics.

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

	FY 2022	FY 2023
Congressional Add: Integrated helmet system	0.000	5.500
FY 2022 Accomplishments: N/A		
FY 2023 Plans: - Complete production of IHS test and evaluation articles. - Complete testing and user evaluations of the IHS. - Complete durability, sustainability, and maintainability assessment. - Complete evaluation of integration with existing communications systems on vehicle platforms. - Complete evaluation of hearing enhancement device integration. - Complete evaluation of performance in various environments. - Complete evaluation of integration with associated equipment and tactics.		
Congressional Adds Subtotals	0.000	5.500

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

N/A

Remarks

D. Acquisition Strategy

Under Marine Corps Ballistic Protection Systems (BPS), the IHS effort is a research, development, testing & evaluation activity designed to seek new developments in ballistic technology that feature reductions in weight, improvements in ballistic performance, enhanced operational effectiveness through improved product designs and the application of new material technologies to reduce total ownership costs by improving the expected service life of fielded systems. In order to accomplish these

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goals, the Marine Corps uses an Other Transactional Authority agreement with contractor performers to achieve the desired end state. This includes partnerships with government entities and research and development contracts and partnership intermediaries where applicable. The Marine Corps also leverages advancements in industry capabilities to rapidly field non-developmental and commercially available off the shelf armor solutions. Performance is confirmed by characterizing ballistic performance and data collected during user evaluations.

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Integrated Helmet System (IHS): Helmet Development and Testing	2	2023	4	2023
Integrated Helmet System (IHS): LUE 3	3	2023	4	2023