Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy											Date: March 2014	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206623M *I MC Ground Cmbt Spt Arms Sys*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	489.869	146.255	116.061	156.626	-	156.626	105.124	83.489	95.922	52.780	Continuing	Continuing
0021: *Assault Amphibious Vehicle 7A1*	100.594	36.468	32.638	104.207	-	104.207	37.137	29.804	46.137	4.631	Continuing	Continuing
1555: *Lt Armored Vehicle Prog*	53.910	25.322	23.754	5.156	-	5.156	18.460	10.401	9.187	9.392	Continuing	Continuing
1901: *MC Grnd Wpnry Prod Improvement*	15.703	10.559	13.823	5.537	-	5.537	5.275	5.450	4.625	4.729	Continuing	Continuing
2086: *Soldier/Marine Enhancement*	13.967	2.751	6.146	4.656	-	4.656	5.413	5.587	5.463	5.899	Continuing	Continuing
2112: *Lightweight 155mm Howitzer*	0.000	-	0.200	0.204	-	0.204	0.207	0.003	0.003	0.003	Continuing	Continuing
2237: *Amphibious Vehicle Test*	0.831	0.933	0.949	0.836	-	0.836	1.002	1.010	0.998	0.921	Continuing	Continuing
2315: *Training Devices/ Simulators*	80.469	19.047	9.697	10.252	-	10.252	11.919	10.860	10.139	9.175	Continuing	Continuing
2503: *Initial Issue*	49.932	5.475	9.142	5.498	-	5.498	5.119	6.185	6.173	4.857	Continuing	Continuing
2513: *Body Armor*	33.387	6.184	0.572	3.431	-	3.431	4.867	4.830	4.585	4.688	Continuing	Continuing
2928: *Exp Indirect Fire Gen Supt Wpn Sys*	13.189	2.270	2.391	1.953	-	1.953	2.768	2.731	2.583	2.369	Continuing	Continuing
3098: *Fire Support System*	96.321	17.155	16.221	14.400	-	14.400	12.449	6.121	5.503	5.580	Continuing	Continuing
4002: *Family of Raid Reconnaissance*	2.684	0.259	0.528	0.496	-	0.496	0.508	0.507	0.526	0.536	Continuing	Continuing
9C85: *Marine Personnel Carrier (MPC)*	28.882	19.832	-	-	-	-	-	-	-	-	-	48.714

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This 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 the development of AAV7A1 reliability, maintainability, operational and safety modifications, improvements in command and control, and product improvements to the family of LAVs. The AVTB provides facilities and personnel which perform a broad range of testing, repair and technical services to

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy	Date: March 2014
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0206623M *I MC Ground Cmbt Spt Arms Sys*

amphibious vehicles. This program is funded under Operational Systems Development Program Element (PE) because it encompasses engineering and manufacturing and manufacturing development for upgrades of existing systems.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	181.693	139.594	179.167	-	179.167
Current President's Budget	146.255	116.061	156.626	-	156.626
Total Adjustments	-35.438	-23.533	-22.541	-	-22.541
• Congressional General Reductions	-	-0.003			
• Congressional Directed Reductions	-	-23.530			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-16.860	-			
• SBIR/STTR Transfer	-4.357	-			
• Program Adjustments	-	-	-76.568	-	-76.568
• Rate/Misc Adjustments	0.001	-	54.027	-	54.027
• Congressional General Reductions Adjustments	-0.222	-	-	-	-
• Congressional Directed Reductions Adjustments	-14.000	-	-	-	-

Change Summary Explanation

The decrease in funding from FY14 to FY15 is a result of changes in the acquisition strategy to the AAV and LAV programs, and terminations of the Marine Personnel Carrier (MPC), Mission Payload Module (MPM), and Disable Point Target (DPT) programs.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 0021 / *Assault Amphibious Vehicle 7A1*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
0021: *Assault Amphibious Vehicle 7A1*	100.594	36.468	32.638	104.207	-	104.207	37.137	29.804	46.137	4.631	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	10.000	-	10.000	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Assault Amphibious Vehicle (AAV) program provides life-cycle support to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through engineering changes resulting from continuous review of sub-systems to maintain system supportability, safety, reduce total ownership costs, improve fleet readiness, address obsolescence issues, and improve vehicle survivability and performance. The AAV program also includes a survivability upgrade which will increase AAVP7A1 survivability and force protection while maintaining the required land and water mobility performance. This upgrade is derived from the need for an operationally effective amphibious armored personnel carrier capability bridge until the future amphibious portfolio of vehicles reaches full operational capability.

The increase from FY14 to FY15 represents the AAV Survivability Upgrade prototype build contract option award, and design engineering for AAV turret, power train, and suspension improvements; as well as nonrecurring engineering and design for AAV electrical characterization, automatic fire supression system, C2 system enhancements, and AAV obsolescence and safety modifications.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Product Development	15.759	24.792	68.538
Articles:	-	-	10.000
Description: AAV Survivability Upgrade will improve the legacy AAV Force Protection capability. Improvements include improved belly protection, integrated blast mitigating seats, integrated spall liners, protected fuel, sponson armor, and selected improvements for water and land mobility.			
FY 2013 Accomplishments: Initiated design, development, and support activities for the AAV Survivability Upgrade. Initiated automotive and suspension improvements, RAM baseline testing, and AAV mobility technical demonstration testing. AAV Upgrade Engineering, Manufacturing, and Design (EMD) and prototype development (3rd Qtr FY14 award).			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Complete automotive and suspension improvements, RAM baseline testing, and AAV mobility technical demonstration testing. Award EMD design, development, and support contract. Conduct preliminary design review. ***FY 2015 Plans:*** Conduct AAV Upgrade Critical Design Review. Award EMD prototype contract option; build EMD prototypes and provide associated support. Begin nonrecurring engineering efforts to support AAV Turret improvements; R7 Recovery Variant improvements; Power Train, Suspension, and Hull enhancements.			
Title: Test and Evaluation	2.455	0.730	0.183
Articles:	-	-	-
Description: AAV Operations Support: Evaluation and testing of safety improvements to include upgraded intercoms, radios, and fact-of-life changes to maintain the AAV Family of Vehicles. ***FY 2013 Accomplishments:*** Initiated AAV performance baseline to include aluminum alloy, soft soil and water testing. ***FY 2014 Plans:*** Complete AAV performance baseline and hull analysis testing. Continue evaluation and testing of safety improvements and fact-of-life changes to maintain the AAV Family of Vehicles. ***FY 2015 Plans:*** Initiate developmental test planning.			
Title: Engineering and Technical Support	8.181	3.152	27.224
Articles:	-	-	-
Description: Provide engineering and technical support for AAV sustainment and modifcations, and Survivability Upgrade efforts. ***FY 2013 Accomplishments:*** Provided engineering and technical support for human systems integration, digital integration facility, and material and travel associated with these efforts. Provided technical and engineering services in support of AAV baseline and hull analysis testing, AAVC7A1 software sustainment and transition, and AAVC7A1 tech refresh planning and analysis efforts. ***FY 2014 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Continue engineering and techncial support for human systems integration, digital integration facility, and material and travel associated with these efforts. Provide technical and engineering support for digital architecture design, development, and analysis. Provide technical and engineering services in support of AAV Survivability Upgrade design evaluation and development. ***FY 2015 Plans:*** Begin nonrecurring engineering and design for AAV electrical, and command and control (C2) systems at the digital integration facility. Begin nonrecurring engineering and design for fire suppression system, auxiliary system enhancements, and future AAV obsolescence and performance modifications in support of AAV survivability efforts. Continue to provide technical and engineering services in support of digital architecture design, development, and analysis. Provide engineering and technical services in support of AAV Survivability Upgrade design, development, and prototype build. Provide material and travel associated with these efforts.			
Title: Program Management ***Articles:*** ***Description:*** Contract management support services for program office support activities. ***FY 2013 Accomplishments:*** Provided technical and program support in development of the AAV Survivability Upgrade statement of work, acquisition plan, acquisition strategy document, and related acquisition documentation. Provided program management services in support of ECP development, trade studies and analyses, supply chain, and government property management in support of AAV sustainment and modification efforts. ***FY 2014 Plans:*** Provide program management services in support of ECP development, trade studies and analysis, and supply chain and government property management in support of AAV sustainment and modification efforts. Provide program support for acquisition documentation development in support of AAV Survivability Upgrade Milestone B. ***FY 2015 Plans:*** Continue progam management services in support of ECP development, trade studies and analysis, supply chain, and government property management in support of AAV sustainment and modification efforts. Continue to provide program management services in support of AAV Survivability Upgrade.	10.073 -	3.964 -	8.262 -
Accomplishments/Planned Programs Subtotals	36.468	32.638	104.207

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/2021: *AAV Product Improvement Program*	16.068	32.360	16.756	-	16.756	26.937	114.560	109.076	115.448	612.589	1,983.233

Remarks

D. Acquisition Strategy

The USMC intends to competitively award a contract to upgrade 392 Assault Amphibious Vehicles. The program's main focus is on improving Marine force protection capabilities. To support the required capabilities, the Survivability Upgrade program will seek to incorporate Non-Developmental Item (NDI) and/or Commercial off the Shelf (COTS) solutions into the existing AAVP7A1 Reliability, Availability, Maintainability/Rebuild to Standard (RAM/RS). The acquisition strategy seeks to minimize cost, schedule, and maximize value, technology readiness, and commonality, while ensuring the selected manufacturer meets the capability attributes established for the AAVP7A1 RAM/RS. R&D will fund competitive designs with MS B in FY14 followed by EMD and production. IOC is scheduled for FY19.

E. Performance Metrics

Milestone Reviews:
Milestone B: 3rd quarter of FY14
Milestone C: 2nd quarter of FY17

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

AAV Integrated Program Plan

As of 11 OCT 2013

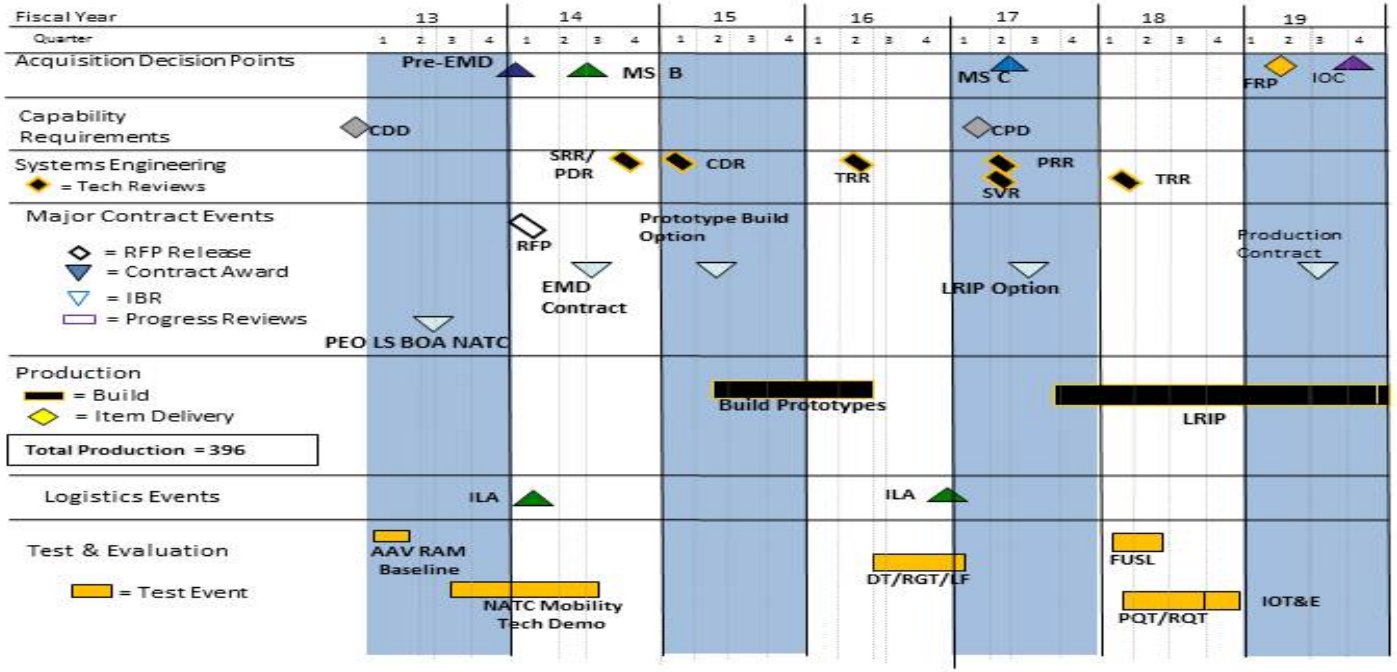

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 1555 / *Lt Armored Vehicle Prog*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
1555: *Lt Armored Vehicle Prog*	53.910	25.322	23.754	5.156	-	5.156	18.460	10.401	9.187	9.392	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Light Armored Vehicle Family of Vehicles (LAV FOV) consists of six fielded LAV configurations, and one communications/intelligence-configured asset on a LAV chassis. The LAV FOV 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 funds modification and sustainment activities and the development and testing of modifications of three programs; the LAV Modification Program, the LAV Anti-Tank Modernization (ATM) Program, and the LAV Survivability Upgrades Program. These programs will ensure that the LAV FOV will be capable of conducting its assigned missions by enhancing lethality and survivability; reliability, availability, maintainability and durability; as well as reducing operations and support costs.

The funding decrease from FY14 to FY15 reflects adjustments to the LAV Acquisition Program Changes and resulting realignment of funds. The Mobility and Obsolescence Program moved from the LAV Survivability Program to the LAV Modification Program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: LAV MODIFICATIONS	15.981	15.204	5.156
Articles:	-	-	-

FY 2013 Accomplishments:

Continued research, development and testing of numerous LAV Modification projects to address minor modifications, safety, survivability, and obsolescence issues: Mobility and Obsolescence requirements development, Milestone B (MS B) preparation and Request for Proposal (RFP) development, Tow Lug Development, First Article Testing for Mission Role Variant (MRV) Fuel Tanks, Blast Attenuating Seat Performance Specification Development for Driver, Vehicle Commander, LAV Troop, Gunners locations, LAV LED Recovery Work Lamp Development and Program Management (PM) support.

FY 2014 Plans:

Continue development of the Mobility and Obsolescence Kits consisting of Powerpack, Driveline, Steering, Electrical System, Suspension, Hull Modifications and Ballistic Protection Upgrade Package (BPUP) Kits. MS B approval, RFP Release, Research & Development (R&D) Contract award, Power Pack, Driveline, Steering, Suspension, Hull Modifications and Electrical System Developmental Test and Operational Assessment Planning, Preliminary Design and Integrated Baseline Reviews, supportability analysis, provisioning and PM support. FY14 plans were adjusted due to the LAV Acquisition program changes and resulting

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
realignment of funds. The Mobility and Obsolescence Program moved from the LAV Survivability Program to the LAV Modification Program. ***FY 2015 Plans:*** Support Developmental Testing, continue Engineering Change Proposal (ECP), Integrated Logistic Support (ILS) data development and Critical Design Review for the Mobility and Obsolescence Kits consisting of Powerpack, Driveline, Steering, Electrical System, Suspension, Hull Modifications, BPUP Kits and PM support.			
Title: LAV ANTI-TANK SYSTEM ***Articles:*** ***FY 2013 Accomplishments:*** Completed design interface and prototype development, began Developmental Testing, Technical Manual Updates, Operational Assessment planning and Program Management (PM) support. ***FY 2014 Plans:*** Complete Technical Manual Updates, prepare Independent Logistics Assessment (ILA) pre-brief and ILA Certification, complete Developmental Testing, begin Operational Assessment Testing, Milestone C (MS C) Preparation, PM support and the following Technical Reviews: Functional Configuration Audit, System Verification Review, Operational Test Readiness Review & Operational Test Readiness Review Board. ***FY 2015 Plans:*** N/A	6.880 -	1.921 -	- -
Title: LAV SURVIVABILITY UPGRADES ***Articles:*** ***FY 2013 Accomplishments:*** Long Lead Item Material Contract consisting of 11 Items for the Power Packs (engine/transmission) associated with the Mobility and Obsolescence program. Continued with development of System Technical Support (STS) Directive 15, Technical Reviews, LOG Reviews, Provisioning Conferences, Mobility and Obsolescence Program Milestone B (MS B) preparation and Program Management (PM) support. Engineering Change Proposal (ECP) development on the LAV Ballistic Seats. ***FY 2014 Plans:*** ECP development on LAV-25 fuel tank, complete modeling and simulation testing seats, seats initial capabilities document P-spec completion, Preliminary Design Review (PDR) and Critical Design Review (CDR) LAV-25 fuel tank and PM Support. FY14 plans	2.461 11.000	6.629 -	- -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
were adjusted due to the LAV Acquisition program changes and resulting realignment of funds. The Mobility and Obsolescence Program moved from the LAV Survivability Program to the LAV Modification Program. ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	25.322	23.754	5.156

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/2038: *LAV PIP*	25.826	6.003	77.736	-	77.736	118.788	164.192	177.109	140.619	Continuing	Continuing
• PMC/7000: *LAV ATM Spares*	-	-	4.767	-	4.767	1.310	0.634	1.011	1.031	-	8.753

Remarks

D. Acquisition Strategy

The LAV Modification program funds numerous low-dollar, yet extremely important minor modifications, support equipment and tools and other projects that increase LAV reliability and readiness while simultaneously reducing operations and support costs. The Marine Corps PM-LAV Modification Team uses multi-disciplined integrated project teams consisting of engineering, logistical, contracting and financial personnel to manage Modification projects. The majority of contracts issued under the Modification line are subject to the competitive acquisition process. Currently the LAV Modification and Sustainment program will capture the Mobility and Obsolescence kits consisting of Power Pack, Driveline, Steering, Electrical System, Suspension, Hull Modifications and Ballistic Protection Upgrade Package (BPUP) Kits. The Mobility and Obsolescence program will address the Family of Light Armored Vehicles (FOLAV) automotive system obsolescence and reduced performance due to increased Gross Vehicle Weight (GVW). This will be achieved through acquisition and the integration of replacement Powerpack, Driveline, Steering, Electrical System, Suspension, Hull Modifications and Ballistic Protection Upgrade Package (BPUP) Kits. This effort will require deliverable kits during the Engineering & Manufacturing Development (EMD) phase, to include Engineering Change Proposals (ECPs) and Modification Instructions (MI) for each of the 7 LAV variants and all Integrated Logistics Support (ILS) products (training, technical publications, tools, test equipment, provisioning, etc.) to support Developmental Testing, Operational Assessment, Independent Operational Test and Evaluation and fielding.

The LAV Anti-Tank Modernization (ATM) program will focus on integrating a new turret into the LAV-AT variant with options for production. The LAV-ATM is a replacement for the obsolete M901A1 turret to correct operational and readiness deficiencies. It will be capable of firing the current family of Tube-launched, Optically tracked, Wire-guided (TOW) missiles and be forward compatible with the next generation of heavy anti-armor missiles. The program was approved in December of 2009 as part of the Material Development Decision to enter at Milestone B (MS B) based on the technical maturity of the capabilities required, schedule, and budget. Milestone B approval was achieved in Mar 2011 and the EMD contract was awarded in Apr 2012. Once the EMD phase is complete, a combined MS C and Full Rate Production Review (FRPR) are planned to be followed by a Production and Deployment Phase and Operations and Support Phase.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

The Survivability Upgrades program will only include replacing and relocating the legacy LAV-25 fuel cells (currently located under the scout seats in the LAV-25) with self sealing fuel cells and adding blast attenuating seats for all 7 LAV variants. These projects are being executed as ECPs.

E. Performance Metrics

Milestone Reviews

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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*

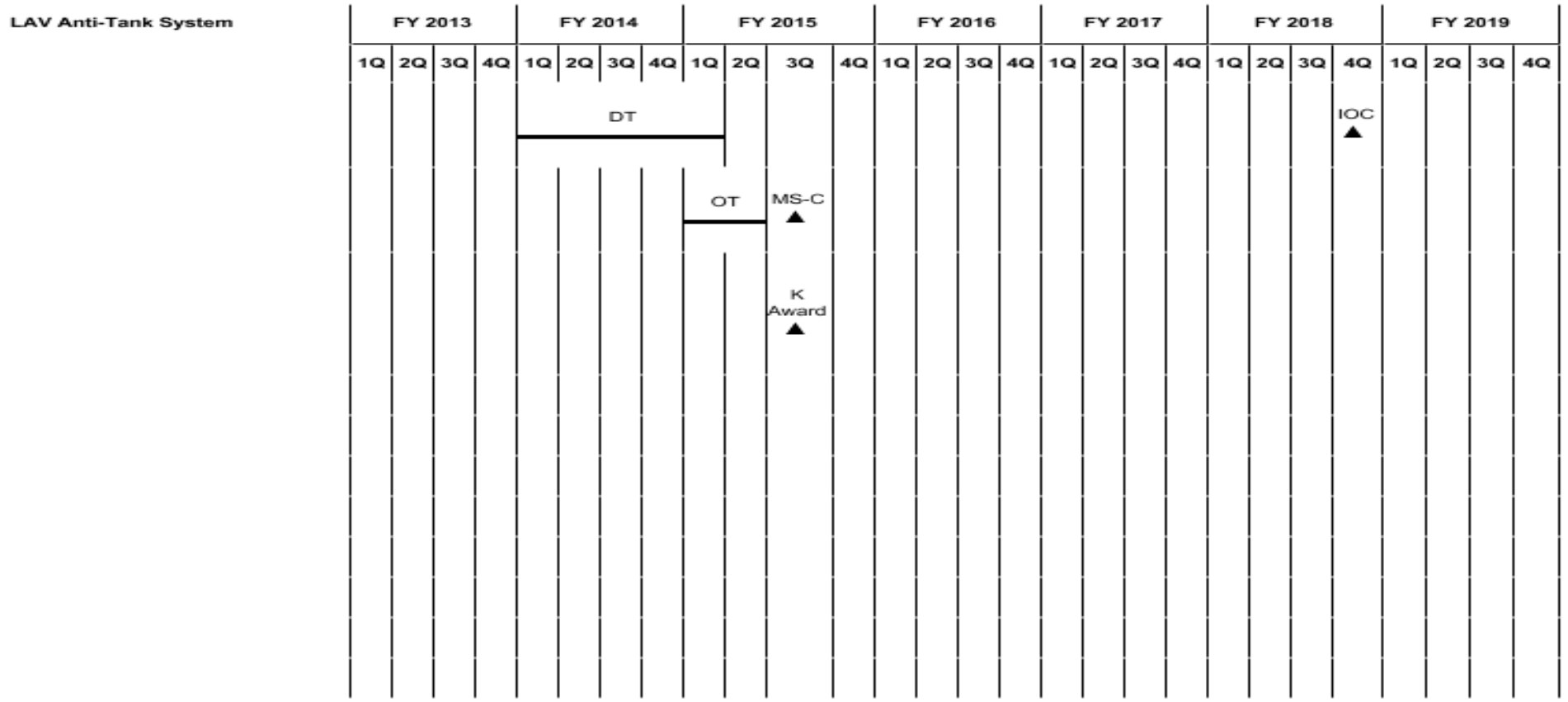

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1555 / *Lt Armored Vehicle Prog*

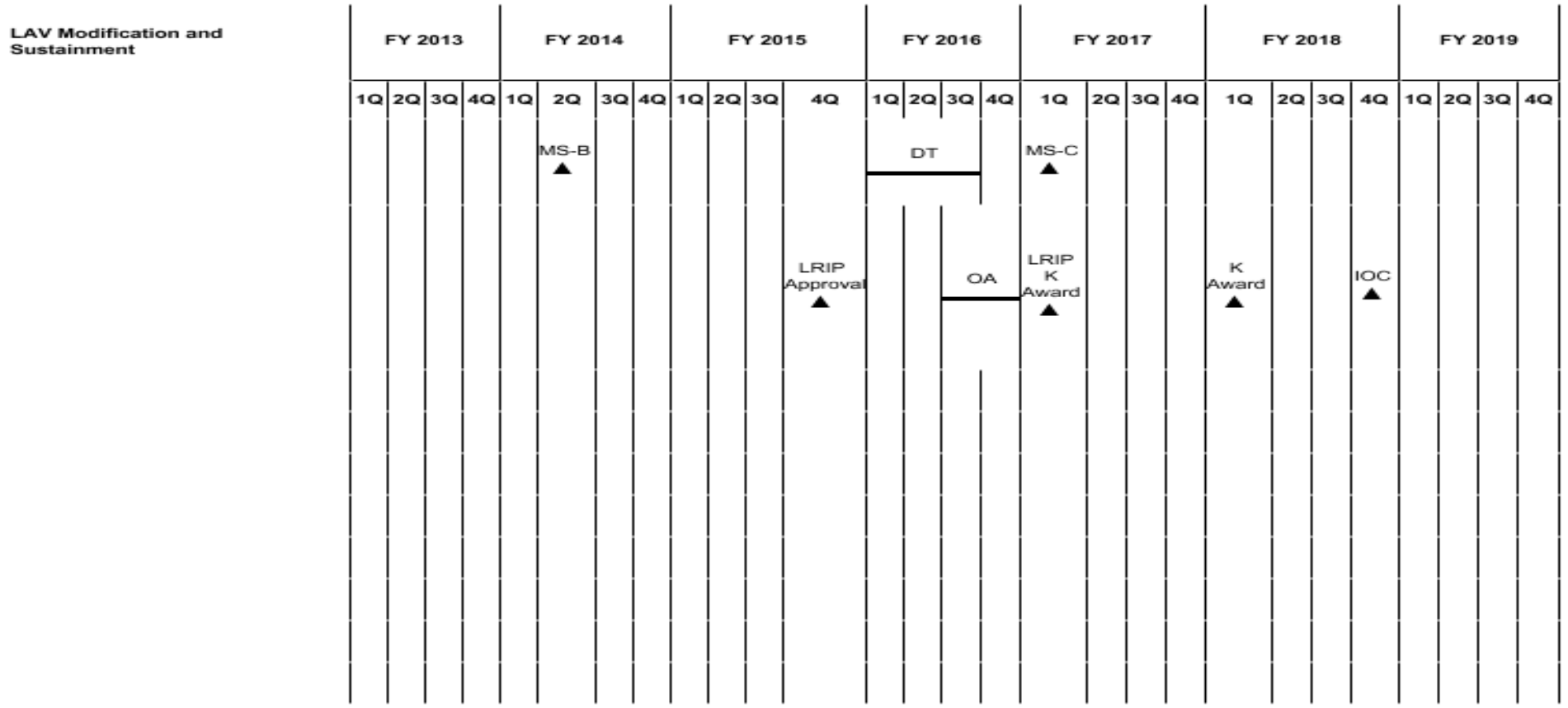

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 1901 / *MC Grnd Wpnry Prod Improvement*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
1901: *MC Grnd Wpnry Prod Improvement*	15.703	10.559	13.823	5.537	-	5.537	5.275	5.450	4.625	4.729	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

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.

The decrease in funding from FY14 to FY15 is a result of the terminations of the Mission Payload Module and Disable Point Target programs.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Infantry Weapons Modifications	1.208	-	-
Articles:	-	-	-
Description: The Infantry Weapons Modification program develops joint and Marine Corps unique improvements to infantry weapons and fire support technology. The improvements address critical operational and logistics deficiencies in fielded infantry weapon systems and equipment. Efforts will be conducted to analyze, design, develop, and field modifications. This allows timely response to safety and performance issues that require immediate attention to maintain operational readiness. Beginning in FY14, Infantry Weapons Modifications is included under Family of Infantry Weapons Systems to form a single level of effort.			
FY 2013 Accomplishments: Conducted Product Improvement Program testing for various Machine Gun Mounts, including but not limited to the M192 Lightweight Ground Mount which is used with M249 Light Machine Gun. Continued to evaluate performance of various types of ammunition currently under development. Continued efforts to analyze, design, develop, and field modifications.			
FY 2014 Plans: N/A			
FY 2015 Plans: N/A			
Title: Mission Payload Module (MPM)	4.429	5.888	-
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Description: The Mission Payload Module (MPM) launches non-lethal payloads to greater ranges with broader area coverage, greater duration of effects, and volume of fire. This will be initially deployed from the Marine Corps Transparent Armored Gun Shield (MCTAGS). MPM will deliver counter-personnel, non-lethal effects applicable to controlling crowds, denying/defending areas, controlling access, and engaging threats. This program has been terminated and does not have RDT&E,N funding beyond FY2014. ***FY 2013 Accomplishments:*** Completed the Source Selection Evaluation process to award the Engineering and Manufacturing Development (EMD) Phase contract. FY 2013 accomplishments also included, but not limited to, finalizing the accreditation plan for models used in conjunction with munition development and test operating procedures utilized during the EMD phase. ***FY 2014 Plans:*** Assisting the contractor with the system design, beginning with System Functional Review. System design will be further developed through the Preliminary Design Review and post-PDR assessment. ***FY 2015 Plans:*** N/A			
Title: Night Vision Mod Line (NVM)	2.177	-	-
Articles:	-	-	-
Description: The Night Vision Mod Line provides sustainment of existing systems through modifications and life-cycle management efforts. Activities focus on the maintenance and update of integrated and increasingly organic logistics support. The modifications funded by this program focus primarily on correction of deficiencies (e.g., safety, size, weight, and power) and service life extension of current systems. The program supports over 30 distinct systems and a combined total of over 600,000 principal end items. This funding line also supports the Marine Corps organic approach to night vision equipment total life-cycle sustainment through the acquisition and procurement of expeditionary maintenance systems. Beginning in FY14, the Night Vision Modification (NVM) Program is combined with the Family of Optical Systems and Modifications (FOSAM) program to form a single level of effort line. ***FY 2013 Accomplishments:*** Continued to develop and conduct testing of the conversion to in-line modification kits for the AN/PAS-13D Thermal Weapon Sights. Continued the development of prototype modification kits to convert stand-alone AN/PAS-17C Miniature Night Sights to an in-line configuration that can be used with magnified day optics. Continued the development of mount interface between in-line			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
night vision devices and the host weapons, M249 and M240B. Conducted Size, Weight and Power (SWAP) reduction study for AN/PEQ-15 and AN/PEQ-16A. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Title: Escalation of Force-Equipment (EoF-E) ***Articles:*** ***Description:*** Escalation of Force Equipment (EoF-E) is a mod (level-of-effort) funding line to support/sustain all fielded Escalation of Force (EoF) equipment and capabilities. Additionally, EoF-E supports type-classification, testing and procurement of new advancements and technologies to provide an increased capability over existing or outdated equipment currently or associated in the Escalation of Force Mission Modules (EoF-MMs). ***FY 2013 Accomplishments:*** Evaluated Light Emitting Diode (LED) light sets to greatly enhance the Vehicle Check Point (VCP) capability within the EoF-MM. This new capability better illuminated the inspection area within a VCP which greatly increased the Warfighter's ability to inspect and detect threats such as IEDs inside vehicles. Also completed vibration, temperature and humidity testing for the Non-Lethal/ Tube Launched Munition System (NL/TLMS). ***FY 2014 Plans:*** Evaluating and upgrading the Translation capability within the Escalation of Force - Mission Module. The present system is obsolete and needs to be replaced with the latest technology. Funding is being used to assess present technologies to replace the legacy systems, and also to assess upgrades to the EoF-MM, NL/TLMS, and LA-9/P Lasers to sustain/support equipment and capabilities. ***FY 2015 Plans:*** Continue to assess upgrades to the EoF-MM, NL/TLMS, and LA-9/P Lasers to sustain/support equipment and capabilities.	0.288 -	0.252 -	0.066 -
Title: Ocular Interuption (OI) ***Articles:*** ***Description:*** Ocular Interruption (OI) is the replacement of the 'Dazzling Laser' program for the LA-9/P and the Glare Mount 532P-M (Mini Green) laser. OI is a 'non-damaging' dazzling system that will be used in Escalation of Force Missions. This program will be supported by the Joint Non Lethal Directorate beginning in FY15.	1.032 -	1.063 -	- -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Completed the System Engineering Plan, Market Research Summary Report, Capability Production Document, Acquisition Decision Memorandum to release Request for Proposals, Proposal Evaluation, development of Test and Evaluation Master Plan and Life Cycle Sustainment Plan. ***FY 2014 Plans:*** Funding is being used for the Contract award, Issuance of Delivery Order 1, Laser Hazard Evaluation, System Verification Testing, final product down select, and Milestone C decision for Ocular Interruption. The funding decrease from FY14 to FY15 is a result of the Joint Non-Lethal Directorate providing funding through FY17. ***FY 2015 Plans:*** N/A			
Title: Sniper System Capability Set (SSCS)	0.006	0.323	-
Articles:	-	-	-
Description: The intent of the Scout Sniper Capability Set (SSCS) program is to establish a consolidated kit that includes common items that are needed by sniper elements throughout the Marine Corps. The SSCS program is composed of a suite of items designed to support scout sniper employment. It includes precision rifles as well as ancillary equipment to include the Scout Sniper Ballistic Computer (SSBC) and Sniper Tripod. The SSCS is employed by sniper teams throughout the Marine Corps within infantry battalions, reconnaissance elements, and the Marine Corps Special Operations Command. ***FY 2013 Accomplishments:*** Initiated testing of the improved buttstock for the M110 Semi-Automatic Sniper System (SASS). The improved buttstock is a component of the M110 SASS conversion kit, which will increase the portability and human factors of the overall system, such as Length of Pull. Testing will require live-fire evaluation of multiple offerors' bid samples and will involve dispersion and reliability testing, as well as a Limited User Evaluation. ***FY 2014 Plans:*** Support testing and evaluation of the integrated Scout Sniper Ballistic Computer/Hand Held Weather Station. This testing will support determination of a best value solution for a system that will provide improved first-round hit probability and reduced system weight and lifecycle cost. In addition, funds will be used for testing and evaluation of modifications to the M40 Series Sniper Rifle. Improvements will increase operational availability and reduce maintenance time and system weight, such as a lightweight barrel and integrated suppressor. ***FY 2015 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
N/A			
Title: Family of Optical Systems and Modification (FOSAM)	1.148	4.116	3.198
Articles:	-	-	-
Description: Program title changed at PB14 from Family of Optical Systems to Family of Optical Systems and Modifications (FOSAM). FOSAM is a level of effort program that provides for research and development, procurement, 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, fused/multi-spectral (e.g., combined image intensifier and thermal imaging) optical and laser systems. Additionally, this line supports the procurement of over 600,000 magnified day optics, thermal imagers, image intensifier, lasers, and illuminators principle end items (PEI) due to combat losses, wash-outs, and increases in Approved Acquisition Objectives. Sustainment efforts include sustainment of optics capabilities and/or improvements to the performance, maintainability, supportability, service life, ergonomics, and safety enhancements. ***FY 2013 Accomplishments:*** Conducted a Fusion Optics Assessment pilot test to evaluate Benefits of Fusion and comparison of technologies for Head Mounted Thermal Systems. Initiated Human Systems Integration of Display Presentation (HSIDP) study. Concluded electro-Optical Countermeasure Assessment. ***FY 2014 Plans:*** Funding is to complete an HSIDP Study, conduct activities to support evaluation of ONR Integrated day-Night Sight Technology (IDNST) prototypes, and to conduct evaluation of Multi-Color Infrared Imaging (MCIRI). ***FY 2015 Plans:*** Funding will be used to assess multiple prototypes of ONR IDNST to inform the development of a joint capability document for future production. Funding will also be used to conduct technology development and evaluation to support life cycle extension and improvement of current optics and inform future optics requirements generation to address capability gaps.			
Title: Disable Point Target (DPT)	0.271	0.655	-
Articles:	-	-	-
Description: The Disable Point Target (DPT) is a Non-Lethal System(s) that will accurately engage/incapacitate a single individual or multiple engagements from 10-50 meters Threshold(T); 2-100 meters Objective(O) for a duration of 30 seconds (T) and 60 seconds (O). Capability provides the Marine with an increased standoff distance during crowd control/human shield situations while simultaneously keeping Marines beyond the reach of a hostile threat. This program has been terminated and does not have RDT&E,N funding beyond FY2014. ***FY 2013 Accomplishments:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Completed an Analysis of Alternatives (AoA) and Life Cycle Cost Estimate (LCCE). ***FY 2014 Plans:*** Funding is being used to obtain a Milestone A Technology Development (TD) Phase Decision and execute the TD Phase contracts. ***FY 2015 Plans:*** N/A			
Title: Company and Battalion Mortars ***Articles:*** ***Description:*** This funding is used to provide system development and demonstration efforts and pre-Milestone C activities, for the Next Generation of Lightweight Handheld Mortar Ballistic Computer software and hardware. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** This funding will be used to provide system development and demonstration efforts, pre-Milestone C activities, and purchasing Non-developmental Items (NDI) for testing and evaluation of candidate systems and modifications for Company and Battalion Mortars, and for the development of software for Lightweight Handheld Mortar Ballistic Computer.	- -	- -	1.195 -
Title: Family of Infantry Weapons Systems (FIWS) ***Articles:*** ***Description:*** Family of Infantry Weapons Systems (FIWS) is not a new start, but has a new program title beginning in FY14 to include efforts previously funded by Infantry Weapons Modifications and Principle End Item Reprocurement programs. FIWS is a level of effort line that provides for continuous monitoring, research and development, assessment of and implementation of Joint Service and USMC unique system modifications. These efforts include: sustain weapon capability and/or improve the performance; maintainability; supportability; service life; ergonomics; and safety enhancements. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:***	- -	1.526 -	1.078 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Funding is being used to conduct Product Improvement Program testing for various Machine Gun Mounts, continue to evaluate performance of various types of ammunition currently under development and continue efforts to analyze, design, develop, and field modifications. ***FY 2015 Plans:*** Funding will be used to conduct Product Improvement Program testing for various Machine Gun Mounts. Will continue to evaluate performance of various types of ammunition currently under development. Will continue efforts to analyze, design, develop, and field modifications.			
Accomplishments/Planned Programs Subtotals	10.559	13.823	5.537

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTEN/2319: *Joint Non-Lethal Weapons Directorate*	-	4.559	8.333	-	8.333	12.344	9.855	3.155	0.777	Continuing	Continuing
• PMC/2208-01: *Escalation of Force - Equip (EoF-E)*	1.665	1.119	0.289	-	0.289	1.442	1.355	1.381	1.407	Continuing	Continuing
• PMC/4930: *Night Vision Equipment (NVE)*	44.478	6.162	9.798	-	9.798	3.259	5.422	9.268	9.476	Continuing	Continuing
• PMC/2208-02: *Ocular Interruption (OI)*	-	2.302	-	-	-	-	1.636	4.144	7.931	Continuing	Continuing
• PMC/2220-01: *Infantry Weapons Modifications*	8.170	-	-	-	-	-	-	-	-	-	38.631
• PMC/2220-02: *Family of Infantry Weapons Systems*	-	7.760	1.840	-	1.840	11.779	8.522	5.176	5.294	Continuing	Continuing
• PMC/2220-03: *Company and Battalion Mortars*	1.309	0.838	0.890	-	0.890	1.123	-	0.816	3.362	Continuing	Continuing

Remarks

Joint Non-Lethal funding supports Mission Payload Module, Ocular Interruption, and Disable Point Target programs.

D. Acquisition Strategy

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

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

E. Performance Metrics

Milestone Reviews

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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*

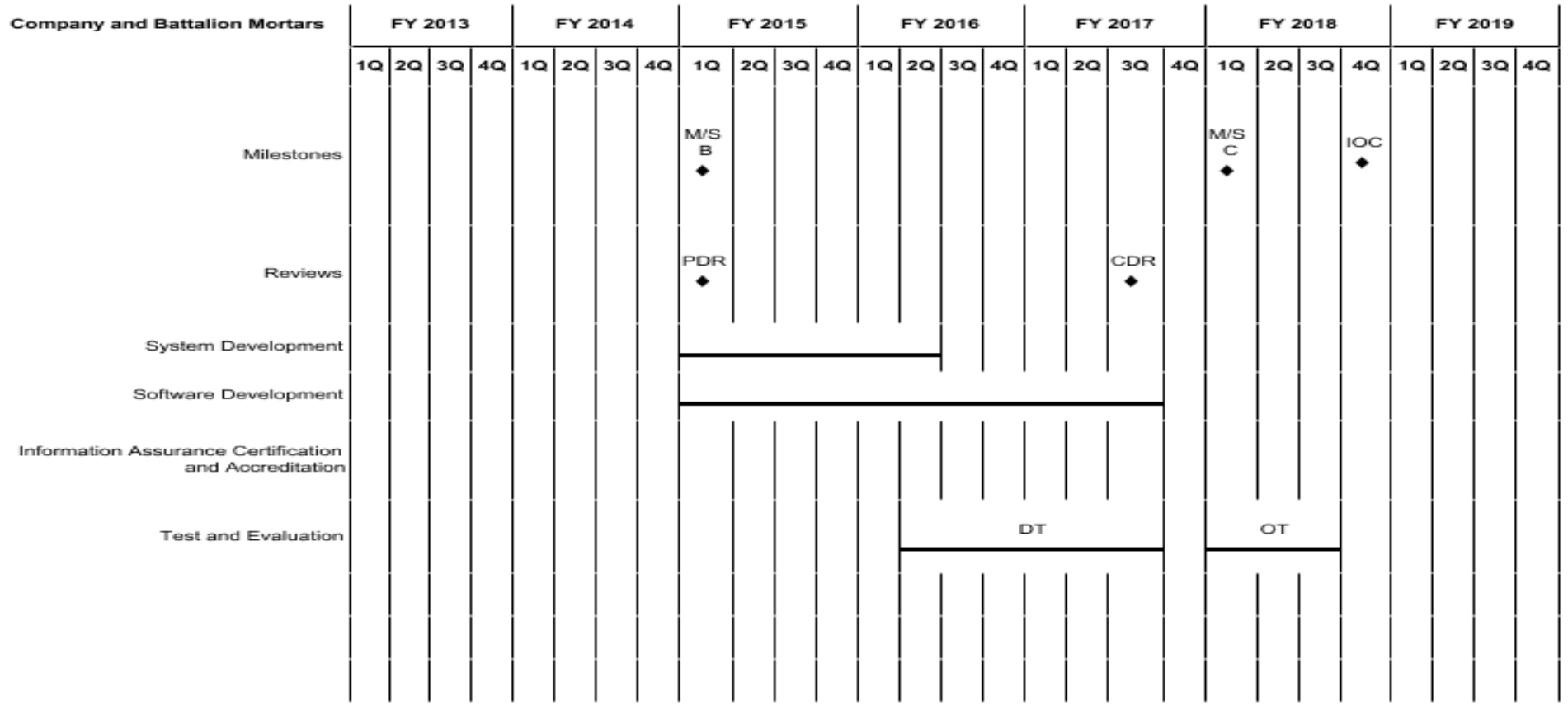

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

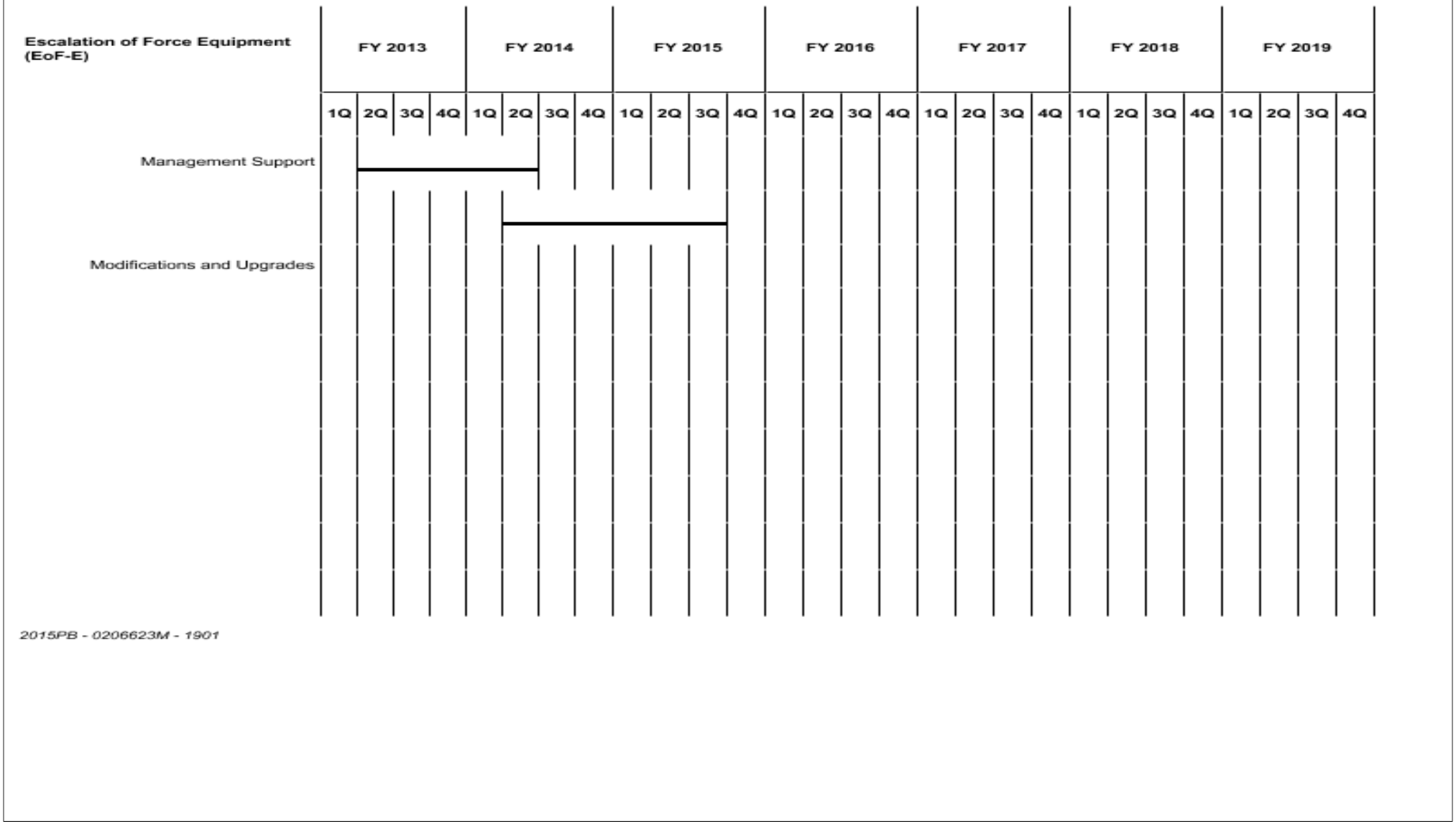

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

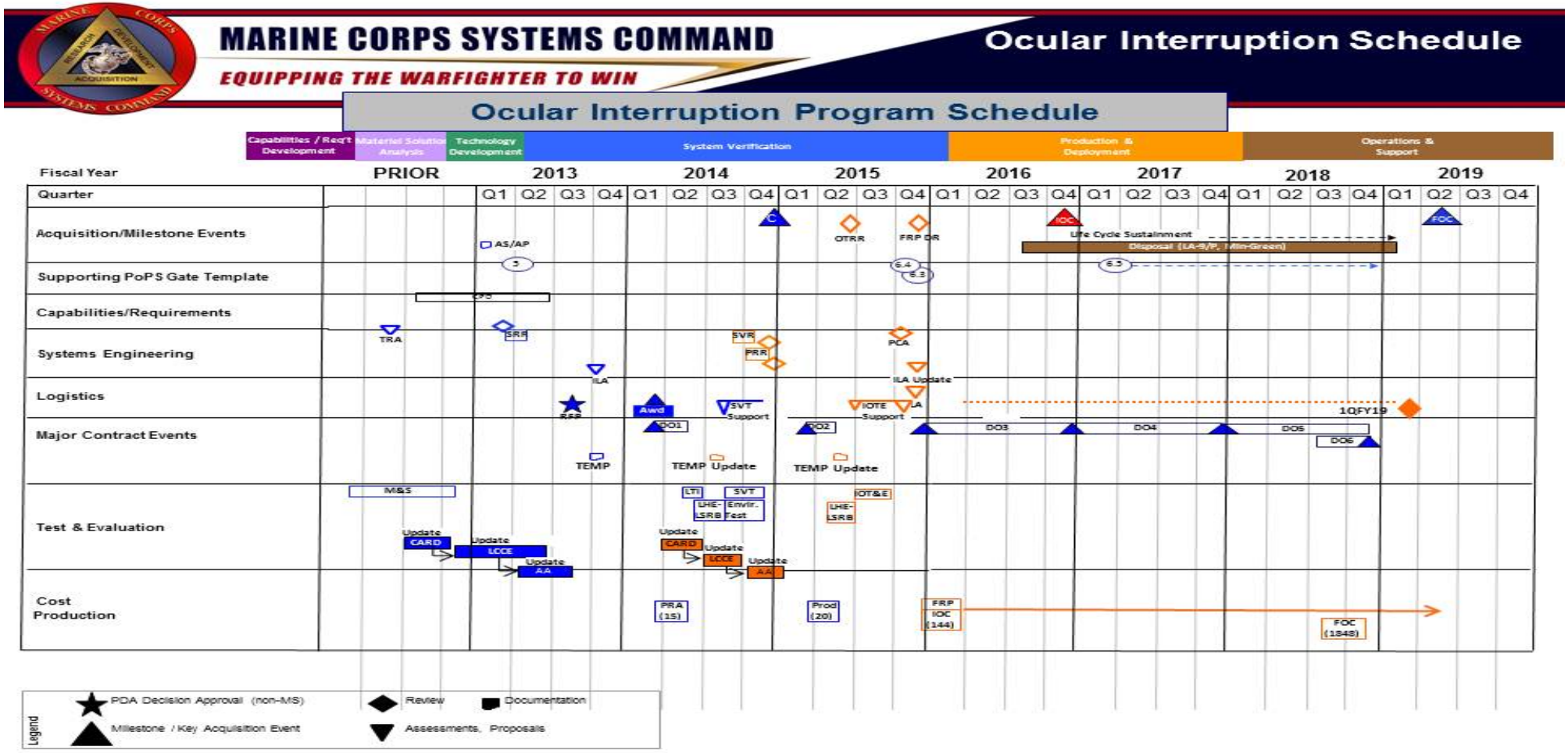

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy											Date: March 2014	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*				Project (Number/Name) 2086 / *Soldier/Marine Enhancement*			
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
2086: *Soldier/Marine Enhancement*	13.967	2.751	6.146	4.656	-	4.656	5.413	5.587	5.463	5.899	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

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 integration, systems engineering, human factors, and modernization efforts across all the products that are worn, carried, and consumed by the rifle squad. Physical integration, capability analysis, modeling and simulation, ergonomics, and configuration management 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. Weight and volume management are fundamental considerations in the insertion or modernization of any squad equipment. MERS works with Joint and 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 war-fighting vision for the future.

Marine Enhancement Program (MEP) provides Research, Development, Test and Evaluation funding for low visibility, low cost items. It focuses on items of equipment which will benefit the individual Marine by reducing the load, increasing survivability, enhancing safety, and improving combat effectiveness. The emphasis of the program is on non-developmental item/commercial off the shelf (NDI/COTS) available items which can be quickly evaluated and fielded. This program is coordinated with the Army's Soldier Enhancement Program (SEP).

Ammunition Life Cycle Management Program responsibility for Total Life Cycle Management for ground conventional munitions. Accordingly, PM Ammo is a member of the joint services Ammunition Logistics Research and Development IPT (ALR&D IPT). Each year the IPT solicits R&D projects from all of the services. The IPT looks for innovative ideas to enhance logistical support for munitions. Approximately 20 Ammo Logistics R&D projects are voted on each year by the IPT. They are prioritized by voting actions of the Senior Review Board and funding sources are identified. Since the funding for ammunition will likely decrease as the Marine Corps draws down and we end our participation in OEF, ammunition logistics R&D projects designed to extend the shelf life of our current inventory, provide enhanced packaging to protect our munitions, and other such projects will go a long way to ensure the Marine Corps can maintain a reliable conventional ammunition inventory into the future. New Start in FY15.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Marine Enhancement Program (MEP)	0.543	3.073	1.750
Articles:	-	-	-
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Based on the mission and the nature of the MEP as an accelerated acquisition process and based on future MEP candidate submissions/selections the projected projects we funded in FY13 - Modular Scalable Vest and Enhanced Hearing Protection ***FY 2014 Plans:*** FY14 funding increase is based on an anticipated increase in FY14 MEP candidate submissions/selections. The exact number of projects is yet to be determined. ***FY 2015 Plans:*** The plans are dependent upon candidate submissions and which candidates are selected to receive funds.			
Title: Marine Expeditionary Rifle Squad (MERS)	2.208	3.073	2.406
Articles:	-	-	-
FY 2013 Accomplishments: Supported all the various Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. Resourced and utilized the Gruntworks Squad Integration Facility as an asset to execute integration projects and usability trials. Conducted user assessments and attribute workshops in support of CREW program. Supported concept development of Modular Scalable Vest with PdM ICE. Conducted data collection in support of Tropical Uniform initiative at the Jungle Warfare Training Center. Supported development of representative anthropometry models to support programs. Provided reports, presentations and assessments on a variety of new equipment currently in development for the squad. Conducted Human Systems Integration support throughout the Command and other organizations. Worked closely with ONR on transition agreements for two projects. Provided expertise to variety of projects internal and external to the Command related to infantry specific issues. Continued to develop key capabilities within the Gruntworks Squad Integration facility. ***FY 2014 Plans:*** 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. Resource and utilize the Gruntworks Squad Integration Facility as an asset to execute integration projects and usability trials. Conduct human performance trials utilizing MC-LEAP and other data collection methodologies. Conduct usability trials and limited user evaluations for Joint Battle Command Platform at the infantry platoon and squad level. Support Modular Scalable Protection System and Tropical Uniform projects with human factors expertise. Conduct experiments using the Marine Corps Load Effects Assessment Program. Develop integrated seating solutions for combat equipped Marines for ACV, MPC, JLTV and other mobility programs and synchronize seat belt and retention systems among the platforms. Conduct R&D on squad systems in conjunction with Army squad system projects. Conduct surveys with post deploying infantry battalions on usability and integration of equipment utilized during deployment. Conduct human performance testing of Marines utilizing current and prototype configurations of infantry rifle squad equipment. Evaluate and transition technologies from ONR and other S&T activities that enhance capabilities of the squad or provide a desired capability. Seek weight and volume			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
reduction replacements for current infantry equipment that support integration of components. Implement requirements from MERS Capabilities Development Document that will be finalized in FY14. ***FY 2015 Plans:*** 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. Resource and utilize the Gruntworks Squad Integration Facility as an asset to execute integration projects and usability trials. Conduct human performance trials utilizing MC-LEAP and other data collection methodologies. Conduct usability trials and limited user evaluations for Joint Battle Command Platform at the infantry platoon and squad level. Support Modular Scalable Protection System and Tropical Uniform projects with human factors expertise. Conduct experiments using the Marine Corps Load Effects Assessment Program. Develop integrated seating solutions for combat equipped Marines for ACV, MPC, JLTV and other mobility programs and synchronize seat belt and retention systems among the platforms. Conduct R&D on squad systems in conjunction with Army squad system projects. Conduct surveys with post deploying infantry battalions on usability and integration of equipment utilized during deployment. Conduct human performance testing of Marines utilizing current and prototype configurations of infantry rifle squad equipment. Evaluate and transition technologies from ONR and other S&T activities that enhance capabilities of the squad or provide a desired capability. Seek weight and volume reduction replacements for current infantry equipment that support integration of components. Implement requirements from MERS Capabilities Development Document that will be finalized in FY15.			
Title: Ammunition Life Cycle Management	-	-	0.500
Articles:	-	-	-
FY 2013 Accomplishments: N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** Support the Ammunition Logistics R&D IPT by funding two of the fifteen projects that have the most logistical impact to the Marine Corps.			
Accomplishments/Planned Programs Subtotals	2.751	6.146	4.656

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC BLI 2208: *Marine Enhancement Program*	2.332	1.313	2.919	-	2.919	2.507	2.462	2.508	2.556	-	33.804

Remarks

D. Acquisition Strategy

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

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
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 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2112: *Lightweight 155mm Howitzer*	-	-	0.200	0.204	-	0.204	0.207	0.003	0.003	0.003	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Lightweight 155mm Howitzer (LW155), also known as the M777A2, provides direct, reinforcing, and general support fires to maneuver forces. It replaces all howitzers in all missions in the USMC and replaces the M198 howitzer as the general support artillery for light forces in the Army. The LW155 fires unassisted projectiles to a range of 15 miles and assisted projectiles to 19 miles. The addition of the digital fire control system enables the weapon to program and fire the improved Excalibur precision-guided munition to ranges in excess of 25 miles with better than 10-meter Circular Error Probable (CEP) accuracy. The LW155 is the first ground combat system whose major structures are made of high strength titanium alloy and the system makes extensive use of hydraulics to operate the breech, load tray, recoil and wheel arms. The combination of titanium structures and the use of hydraulic systems resulted in a significant weight savings over the M198 system (7000 lbs.). Compared to the M198, the LW155 emplaces three-times faster and displaces four-times faster. It traverses 32 percent more terrain worldwide and is 70 percent more survivable than the M198. The LW155 was first introduced into the Marine Corps in April 2005 and since then 10th, 11th, 12th and 14th Marines and the schoolhouses have been fielded. The Army has been fielding the system to its Stryker Brigades and Fires Brigades. The LW155 is currently in OEF with both Services.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: ECP Material Solutions	-	0.200	0.204
Articles:	-	-	-
FY 2013 Accomplishments: N/A			
FY 2014 Plans: Funding will support the LW155 Howitzer's requirements for research and development to remedy technical issues arising from the field or validated performance enhancements. These will include areas such as the cannon assembly, titanium structures, fire control systems and future power technology.			
FY 2015 Plans: Funding will support engineering analysis for Digital Fire Control System component upgrades. Funding will support concepts to increase M777A2 range and future power technology solutions.			
Accomplishments/Planned Programs Subtotals	-	0.200	0.204

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 218500: *PMC - LW155*	17.889	3.655	4.532	-	4.532	7.536	2.657	0.363	0.178	-	1,332.364

Remarks

D. Acquisition Strategy

Production and fielding of the LW155 has concluded and has now entered into the Sustainment Life Cycle Phase. The program will continue to perform research and development to remedy obsolescence issues, diminishing manufacturing sources, technical issues and emergent threats.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
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 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2237: *Amphibious Vehicle Test*	0.831	0.933	0.949	0.836	-	0.836	1.002	1.010	0.998	0.921	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Amphibious Vehicle Test Branch (AVTB) is a component of Marine Corps Systems Command (MCSC) and is the Department of Defense's only certified amphibious vehicle test capability. The AVTB plans, executes, analyzes and reports results of developmental and integrated test and evaluation events, predominately supporting the development and performance validation of amphibious and ground combat vehicle system capabilities. The AVTB conducts or supports testing for the MCSC; Navy PEOs and Program Management Offices; the Office of Naval Research; and HQMC PP&O and CD&I, as directed. The AVTB mission is to plan, execute, analyze and report developmental and integrated test and evaluation of USMC wheeled, ground combat vehicles and other events in order to characterize the performance of amphibious and ground combat vehicle systems and enable informed acquisition decisions.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Contracts	0.933	0.949	0.836
Articles:	-	-	-

FY 2013 Accomplishments:

Provided the necessary support resources to safely and effectively conduct simultaneous developmental testing on amphibious vehicles and other prototype systems for the Marine Corps and Navy. Coordinated and executed the maintenance, refurbishment, upgrade, and replacement of test equipment. Provided program support, supplies, and services at the AVTB test site, as well as various off-site test locations, in order to support tests and test resources. Testing for FY13 included: (1) Assault Amphibious Vehicle (AAV) Reliability, Availability, and Maintainability (RAM) baseline determination for PEO LS / PM AAA; (2) Marine Personnel Carrier (MPC) demonstrations for PEO LS / PM AAA; (3) Augmented Reality Visualization Common Operational Picture (ARVCOP) multi-vehicle demonstration for NAVSEA; (4) Field User Evaluation of new AAV Emergency Egress Lighting System for PEO LS / PM AAA; (5) Hydrodynamic Test Rig feasibility assessment in support of the NAV program office; (6) small boat craft and operators to support the Office of Naval Research's Fleet experimentation exercise - Trident Warrior; (7) LAV variant upgrades water performance validation.

FY 2014 Plans:

Provide the necessary support resources to safely and effectively conduct simultaneous developmental testing on amphibious vehicles and other prototype systems. FY14 priorities include providing continual support for Hydrodynamic Test Rig focused technology demonstrations in support of the NAV program office; provide small boat craft and operator support to the Office of Naval Research's annual Fleet experimentation exercise - Trident Warrior; support LAV variant water testing; test Networking

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
on the Move (NOTM) integrated with the AAV; conduct AAV baseline in support of PEO LS / PM AAA and, specifically, the AAV survivability upgrade; test the Topographic Production Capability (TPC) system to validate MilStd 810 compliance. Additionally, the AVTB will continue to improve and expand on existing capabilities to prepare for the NAV and upgraded AAV system testing beginning during FY16. ***FY 2015 Plans:*** The AVTB anticipates continued testing of the HTR to support the NAV design development and technology risk reduction efforts; LAV variant water testing; AAV baseline and focused testing to inform the upgrade acquisition and contracting process; provide resources and technical expertise to ONR's Exercise Trident Warrior; and provide test support to other MCSC, Navy PEO and PMM requirements.			
Accomplishments/Planned Programs Subtotals	0.933	0.949	0.836

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Work will be led in-house. Necessary contractor support will be provided by Marine Corps Base Camp Pendleton via existing contracts. SouthWest Regional Transportation Office will be used for vehicle leases.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
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 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2315: *Training Devices/ Simulators*	80.469	19.047	9.697	10.252	-	10.252	11.919	10.860	10.139	9.175	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

(U) Training simulators supported by this program element include Combined Arms Command & Control Training Upgrade System (CACCTUS), Deployable Virtual Training Environment (DVTE), Multiple Integrated Laser Engagement System (MILES) 2000, Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements, Range Modernization/Transformation (RM/T), Supporting Arms Virtual Trainer (SAVT), Squad Immersive Training Environment (SITE) and Training Support. These training systems provide tactical weapons and decision-making skill training from 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 simulation, the Marine Corps will have the 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 2013	FY 2014	FY 2015
Title: Combined Arms Command and Control Trainer Upgrade System (CACCTUS)	5.621	3.725	6.088
Articles:	-	-	-
Description: CACCTUS is a combined arms staff training system that when fully fielded will enable 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 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.			
FY 2013 Accomplishments: - Continued development of Distributed Ops and Virtualization - Continued development of Live, Virtual, and Constructive (LVC) training capabilities - Continued development of warfare specific software application in support of forward observer to regimental staff training requirements			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
- Completed fielding of version 6 with additional Strikelink Forward Air Controller (FAC) functionality - Initiated development of After Action Review (AAR) functionality ***FY 2014 Plans:*** - Continue development of Distributed Ops and Virtualization - Continue development of LVC training capabilities - Continued development of warfare specific software application in support of forward observer to regimental staff training requirements - Initiate development of some Distributed Operations capability - Initiate development of Backward compatibility for scenario development - Continue development of AAR functionality ***FY 2015 Plans:*** - Continue development of Distributed Ops and Virtualization - Continue devleopment of AAR functionality - Initiate development of new architecture to support maturing hardware platforms			
Title: Deployable Virtual Training Environment (DVTE)	2.189	0.269	0.587
Articles:	-	-	-
Description: DVTE is a laptop Personal Computer (PC) based simulation system capable of emulating organic and supporting Infantry Battalion weapons systems and training scenarios to facilitate training and readiness based training. Its portable configuration allows Marines to train in areas where there are few options for training garrison, aboard ship, at remote reserve locations, and 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 focusing on achieving an improved level of combat readiness. Due to DVTE being non-MAGTF Integration Plan compliant, there is minimal risk of losing the expanded training capability. As a result, funds were reduced throughout the FYDP. DVTE will utilize operations and maintenance funding for future software updates. ***FY 2013 Accomplishments:*** - Continued incremental DVTE network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
- Completed the additional efforts specified under the DVTE Capability Development Document (CDD) Increment II that includes Command, Control, Communications, Computers and Intelligence (C4I) Integration and DVTE interoperability. - Initiated the efforts specified under the DVTE Software Capability Development Document (CDD) Increment II that includes improved Call For Fire (CFF) and Close Air Support (CAS) capability to replace/decrease actual live training events. ***FY 2014 Plans:*** - Continue incremental DVTE network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan. - Continue the additional efforts specified under the DVTE Software Capability Development Document (CDD) Increment II that includes improved Call For Fire (CFF) and Close Air Support (CAS) capability to replace/decrease actual live training events. ***FY 2015 Plans:*** - Continue incremental DVTE network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan. - Continue the additional efforts specified under the DVTE Software Capability Development Document (CDD) Increment II that includes improved Call For Fire (CFF) and Close Air Support (CAS) capability to replace/decrease actual live training events.			
Title: Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements	2.498	2.635	2.004
Articles:	-	-	-
Description: MTWS is the only Marine Corps aggregate-level constructive simulation system designed to support the training of Senior Commanders and their staffs in command and control processes and procedures. The system provides interactive, multi-sided, force-on-force, real-time modeling and simulation with stand-alone tactical combat scenarios for air ground, surface, and amphibious operations that interfaces to fielded Marine Corps Command, Control, Communications Computers and Intelligence (C4I) systems such as Command and Control Personal Computer (C2PC) and Intelligence Operations Server (IOS). MTWS provides the battle staff the ability to seamlessly train with and use other C4I systems during the execution on an MTWS supported training event. Through the implementation of a High Level Architecture (HLA) interface between MTWS and the entity-level Joint Conflict and Tactical Simulation (JCATS) system, high resolution tactical objectives can be simulated in JCATS and reflected within the context of a larger operation scenario conducted in MTWS.			
FY 2013 Accomplishments: - Continued interoperability development of the MTWS High Level Architecture (HLA) bridge - Continued interoperability development of MTWS integration into the Joint Live Virtual Constructive (JLVC) Federation - Continued development to increase levels of software capability to meet the changing operational environment that Marines fight in daily			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
- Continue interoperability development of the MTWS High Level Architecture (HLA) bridge - Continue interoperability development of MTWS integration into Joint Live Virtual Constructive (JLVC) Federation, with primary focus on amphibious landings - Continue development to increase levels of software capability to meet the changing operational environment that Marines fight in daily - Initiate design/development and test of a detailed unified architecture in support U.S. Korea Command (KORCOM) interoperability - Initiate server virtualization testing ***FY 2015 Plans:*** - Continue interoperability development of MTWS integration into Joint Live Virtual Constructive (JLVC) Federation, with primary focus on amphibious landings - Continue design/development and test of a detailed unified architecture in support U.S. Korea Command (KORCOM) interoperability - Continue server virtualization testing			
Title: Multiple Integrated Laser Engagement System (MILES) ***Articles:*** ***Description:*** MILES 2000 is the base technology for Range Instrumentation development that is used in Force-on-Force (FoF), Free Play, and FoF Target exercises. MILES 2000 is an integral component of the Position Location Instrumentation (PLI) providing individual Marine feedback and engagement adjudication. The MILES program has been terminated there are no additional funds beyond FY13. ***FY 2013 Accomplishments:*** - Completed minimal Live, Virtual and Constructive (LVC) training technologies integration with the Instrumented Tactical Engagement System (I-TESS), the Squad Immersive Training Environment (SITE) and the Infantry Immersion Trainers (IITs). ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A	0.048 -	- -	- -
Title: Range Modernization/Transformation (RM/T) ***Articles:***	6.496 -	1.000 -	- -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Description: RM/T 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. RM/T integrates Live, Virtual, and Constructive training technologies, thereby, enhancing fielded live-fire, force-on-target, and force-on-force training capabilities. Reduction of funding is a result of funding cuts and Training and Education Command (TECOM) decision to realign RDTE funding to OMMC to sufficiently sustain, operate, and allow for safety and environmental controls on fielded assets. ***FY 2013 Accomplishments:*** - Completed effort associated with development of the dynamic training system capable of real-time and post mission battle tracking, data collection, and deliverance of After Action Review to meet current and future regular/irregular warfare training requirements. - Continued to increase effort associated with software upgrades to the Range Instrumentation Systems Exercise Controller (RISCon) to ensure integration of numerous Immersive Infantry Training systems (i.e. Avatar, Automatic Performance Evaluation and Lessons Learned, Specs audio system, and Tactical Video Capture System). - Initiated development of Live Core System Instrumented-Tactical Engagement Simulation System II (I-TESS II) upgrades. ***FY 2014 Plans:*** - Continue to perform minimum software upgrades to the Range Instrumentation Systems Exercise Controller (RISCon) and ensure integration of numerous target systems. ***FY 2015 Plans:*** N/A			
Title: Squad Immersive Training Environment (SITE)	1.742	1.836	1.518
Articles:	-	-	-
Description: SITE is an integrating construct or "toolkit" of Live, Virtual and Constructive (LVC) training capabilities used to significantly improve infantry squad operational readiness and squad leader tactical decision-making skills. The collection of LVC training capabilities within SITE will enhance opportunities for squad collective training to increase tactical proficiency, confidence, and readiness for real world operations. SITE will enhance skill transfer and assessment by enabling squads to finish, test, and remediate training in preparation for a capstone exercise such as pre-deployment training. ***FY 2013 Accomplishments:*** - Continued to produce acquisition, program of record, and systems engineering documentation and product development to include (1) Analysis of Alternatives (AoA); (2) material solution analysis; (3) Systems Design Specification; (4) Interface			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Design Document; and (5) an overarching System Engineering Master Plan (SEMP) crossing current training systems to steer development of standards and a roadmap for system capability upgrades and sustained interoperability. The SEMP will include a methodical, phased approach to develop SITE capabilities over time and to initiate interoperability plans addressing highest priority AoA gaps. - Initiated development of Live Core System Instrumented-Technical Engagement Simulation System II (I-TESS II) upgrades to include Shoulder-Launched Multipurpose Assault Weapon (SMAW) and Javelin simulators. - Initiated Technical Interchange Meetings monitoring progress of the Virtual Battle Space 2 (VBS2) development of the SITE specific enhancements for Indigenous Populations, Patrollings, Combat Hunter, conduct missions, communications, Tactical SITE Exploitation, and Tactical Vehicle Load Plans. ***FY 2014 Plans:*** - Continue to produce additional documentation associated with product development to include (1) Systems Design Specification; (2) Interface Design Document; and (3) an overarching System Engineering Master Plan (SEMP) crossing current training systems to steer development of standards and a roadmap for system capability upgrades and sustained interoperability. - Continue Live Core System Instrumented-Tactical Engagement Simulation System II (I-TESS II) upgrades to include One Tactical Engagement Simulation System (OneTESS) integration. - Continue capability upgrades to the VBS2 environment for realistic After Action Review and Operations. - Initiate transition of Office of Naval Research Technology Insertion Program for Savings (TIPS) project Squad Leader Decision Trainer, cost analysis activities for transition of PercepTS, and Augmented Immersive Team Training (AITT) transition deliverables to provide immersive training capabilities with existing programs of record. ***FY 2015 Plans:*** - Continue to provide immersive training capabilities with existing programs of record systems and develop capability upgrades to include integration of I-TESS II enhancements with Range Instrumentation Systems Exercise Controller (RISCon). - Initiate Training Effectiveness Evaluation events for system enhancements for I-TESS II SMAW and Javelin weapons, and OneTESS. - Initiate transition of Office of Naval Research project PercepTS and AITT products and deliverables.			
Title: Supporting Arms Virtual Trainer (SAVT)	0.395	0.171	-
Articles:	-	-	-
Description: The SAVT will advance the training capability, operational readiness, and tactical proficiency of USMC Joint Terminal Attack Controllers (JTACS), Forward Observers (FOs), and Forward Air Controllers (FACs). The personnel will use training scenarios that require the placement of 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,			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
neutralization, suppression, illumination/coordinated illumination, interdiction and harassment fire missions. Programmatic effort provided by Government Engineering Labor support for project will complete in FY14. ***FY 2013 Accomplishments:*** - Continued to provide Govt Engineering Labor support for modeling and simulation for aircraft enhancements to SAVT - Continued Government Engineering Labor support for enhancements of Digital Channel Associated Signalling (CAS) to integrate Marine organic equipment and Digital CAS providing interoperability amongst virtual training systems. ***FY 2014 Plans:*** - Continue to provide Govt Engineering Labor support for modeling and simulation for aircraft enhancements to SAVT - Continue Government Engineering Labor support for enhancements of Digital Channel Associated Signalling (CAS) to integrate Marine organic equipment and Digital CAS providing interoperability amongst virtual training systems. ***FY 2015 Plans:*** N/A			
Title: Training Support ***Articles:*** ***Description:*** Provide training solution development efforts for the modernization of training systems by providing high fidelity, immersive simulations and capabilities. Integrates existing live, virtual, and constructive training capabilities to provide fully coordinated Marine Air Ground Training Force (MAGTF) training exercises that realistically simulate the operating environment. ***FY 2013 Accomplishments:*** - Completed incremental Deployable Virtual Training Environment (DVTE) network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan. - Initiated and completed additional efforts specified under the DVTE Capability Development Document (CDD) Increment II that includes Command, Control, Communications, Computers and Intelligence (C4I) and DVTE interoperability. ***FY 2014 Plans:*** - Initiate the development of tools that will provide Return on Investment (ROI) capability for training events - Continue interoperability development of MAGTF Tactical Warfare Simulation (MTWS) integration to Joint Live Virtual Constructive (JLVC) Federation, with primary focus on amphibious landings. - Initiate server virtualization testing ***FY 2015 Plans:*** - Continue development of MAGTF Tactical Warfare Simulation (MTWS) integration to JLVC Federation	0.058 -	0.061 -	0.055 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- Continue server virtualization testing - Initiate design/development and test of a detailed unified architecture in support U.S. Korea Command (KORCOM) interoperability and amphibious landings for MTWS.			
Accomplishments/Planned Programs Subtotals	19.047	9.697	10.252

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/6532-01: *Training Devices, CACCTUS*	1.665	3.269	2.520	-	2.520	1.601	2.034	2.713	3.936	Continuing	Continuing
• PMC/6532-02: *Training Devices, RM/T*	42.018	2.522	-	-	-	3.852	5.931	6.234	6.366	Continuing	Continuing
• PMC/6532-03: *Training Devices, DVTE*	2.303	1.282	-	-	-	-	1.128	1.434	1.457	Continuing	Continuing
• PMC/6532-04: *Training Devices, SAVT*	0.599	-	-	-	-	-	-	-	-	-	1.938
• PMC/4630: *Common Computer Resources, MTWS*	0.656	0.585	0.546	-	0.546	0.552	0.560	0.574	0.587	Continuing	Continuing

Remarks

D. Acquisition Strategy

(U) CACCTUS - Exercise option on existing contract (T&M), Commercial Enterprise Omnibus Support Services (CEOSS) contract (C/FFP), and Work Request to Navy-NAWCTSD. New competitive contract planned for late 4th quarter FY14.
(U) DVTE - Exercise final option in FY14 for developmental hardware. A new sole source FFP for VBS2 SW Dev in FY15.
(U) MILES - New Competitive Firm Fixed Price (FFP) and Work Request to Navy-NSWC Carderock for battery certification
(U) MTWS - Sole Source Firm Fixed Price (SS/FFP) Option Year 2 and MIPR to Army-CECOM to be placed on MITRE contract. New competitive contract planned for 2nd quarter award in FY15.
(U) RM/T - MIPR to the Army planned for award on existing Consolidated Product-line Management Contract, Work Request to Navy-NAWCTSD, and New Competitive Firm Fixed Price (C/FFP).
(U) SAVT - Work Request to Navy-NAWCTSD
(U) SITE - New Competitive Firm Fixed Price (C/FFP) and Commercial Enterprise Omnibus Support Services (CEOSS) contract (C/FFP)
(U) Training Support - MTWS Sole Source Firm Fixed Price (SS/FFP) Option Year 2 award in 2nd quarter FY14. A new competitive contract is planned for award in 2nd quarter FY15.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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E. Performance Metrics

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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*

Combined Arms Command & Control Training Upgrade System (CACCTUS) PROGRAM SCHEDULE

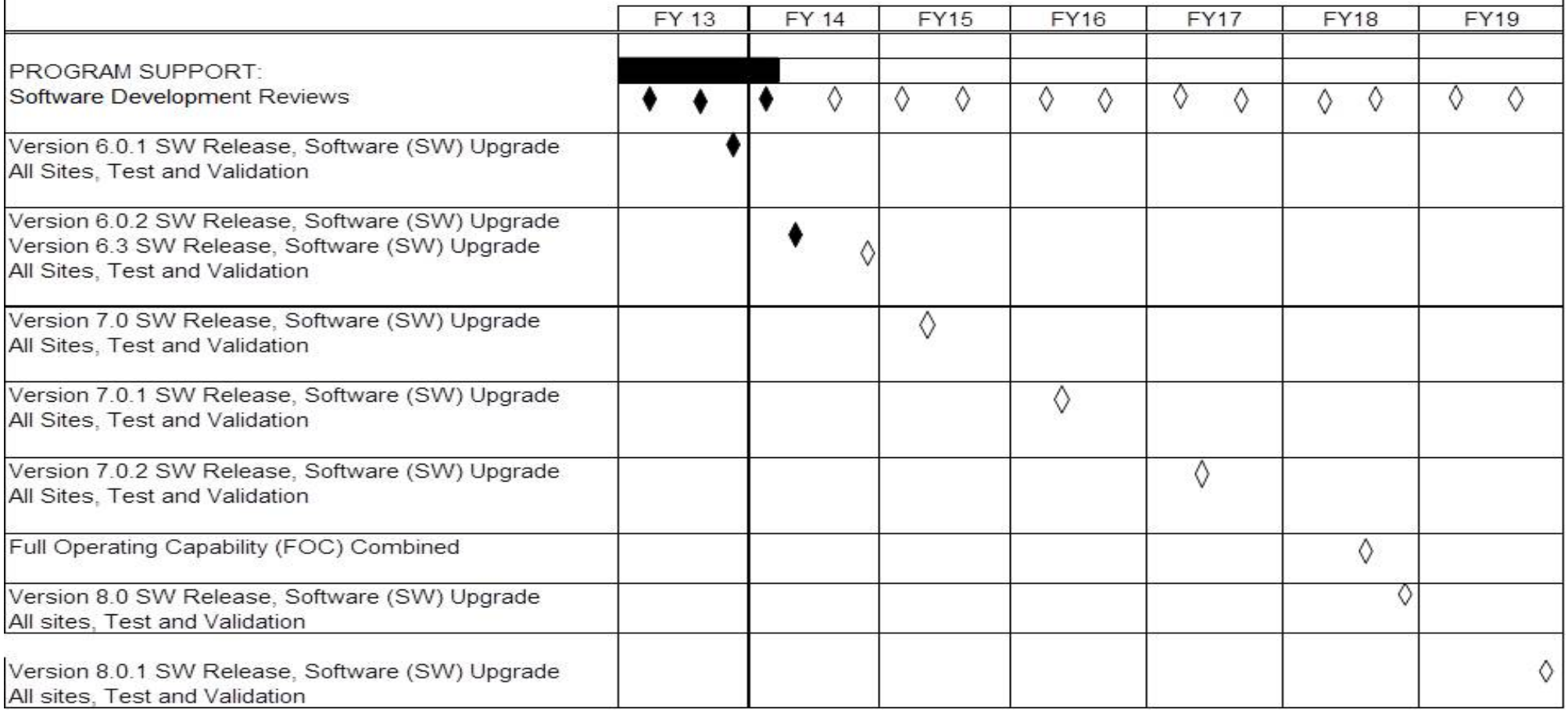

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

Deployable Virtual Training Environment (DVTE) PROGRAM SCHEDULE

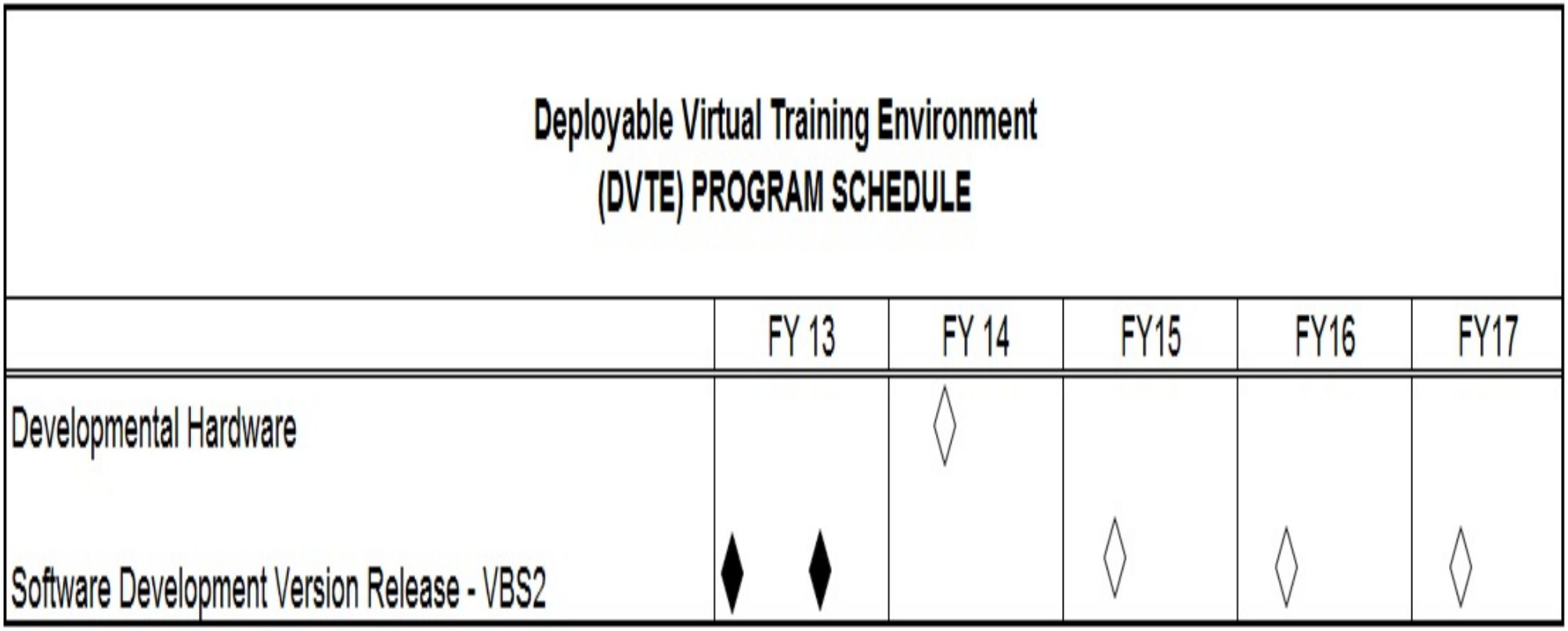

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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Marine Air-Ground Task Force (MAGTF) Tactical Warfare Simulation
(MTWS) PROGRAM SCHEDULE

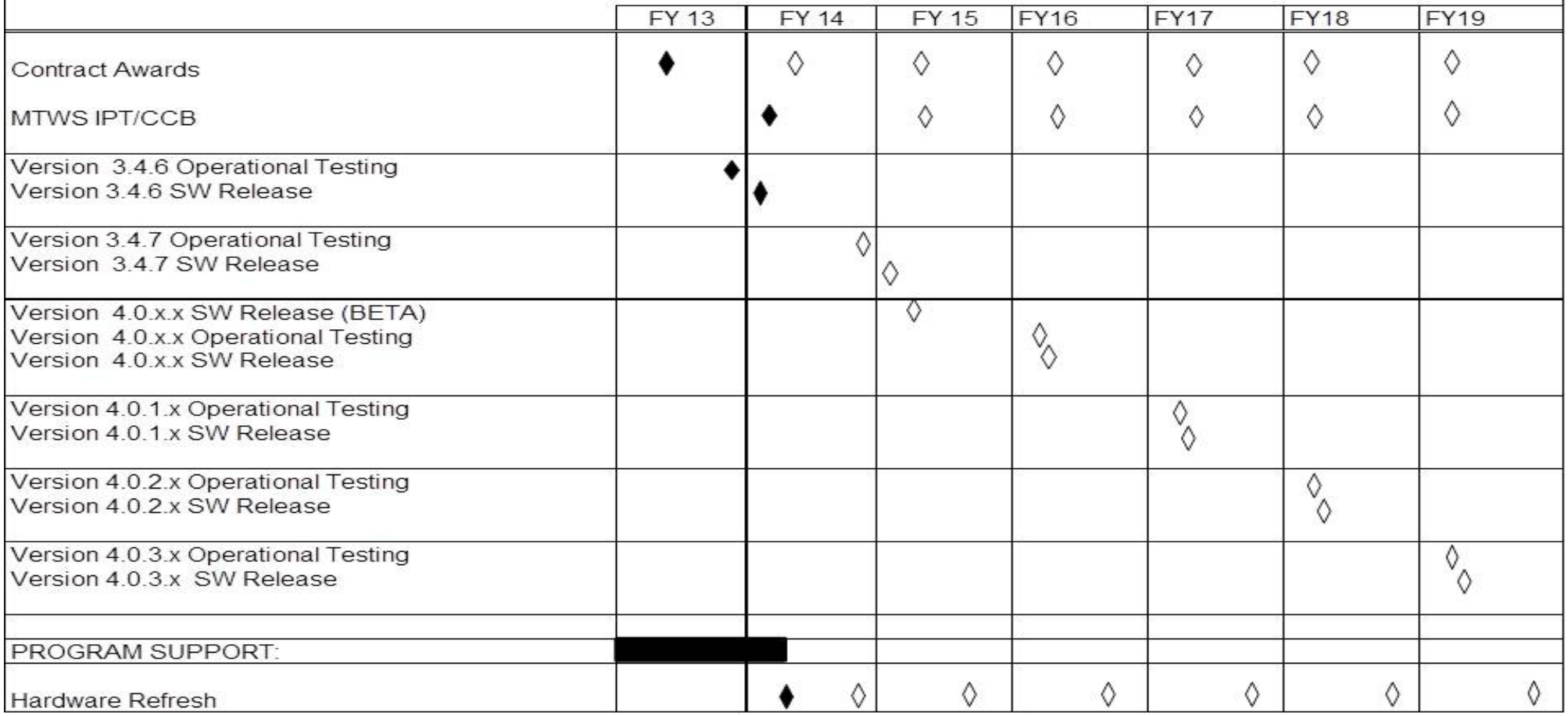

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

460510 - SITE

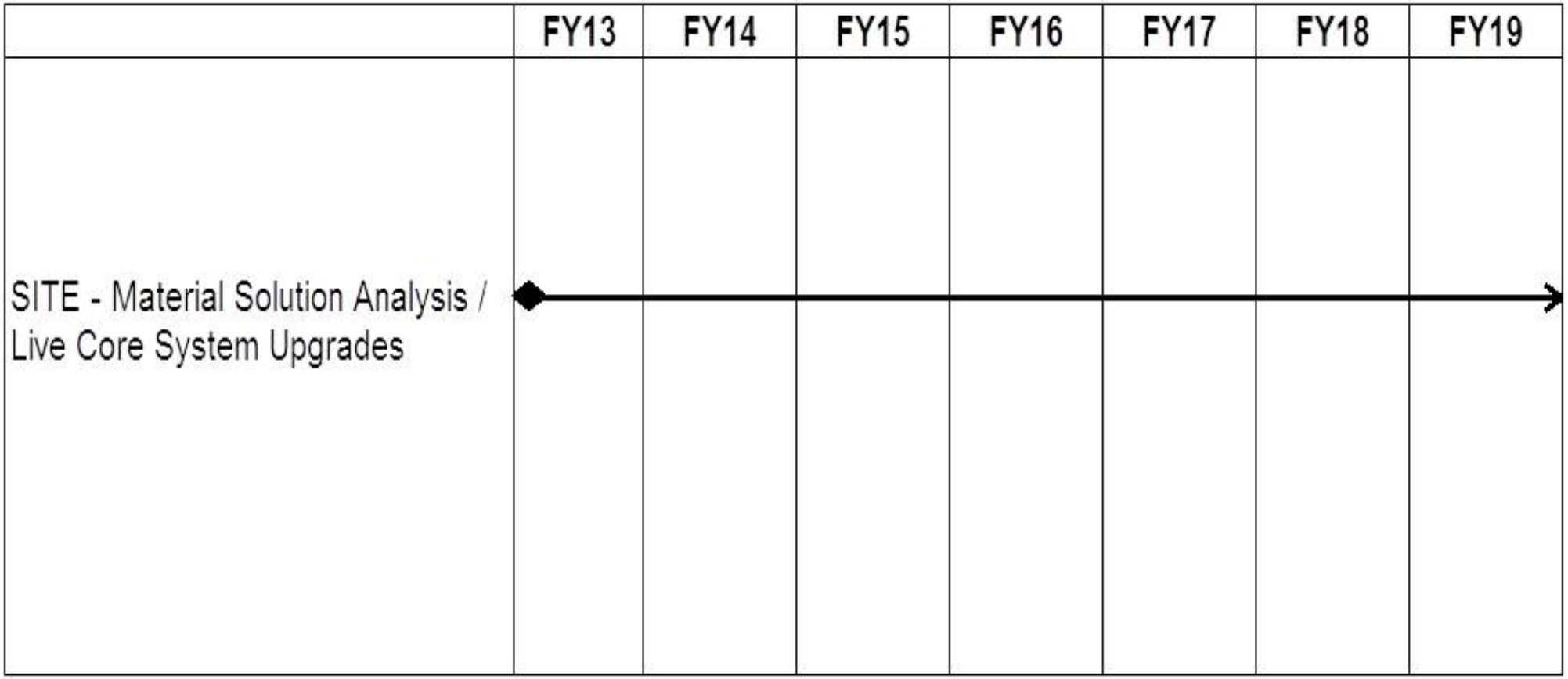

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

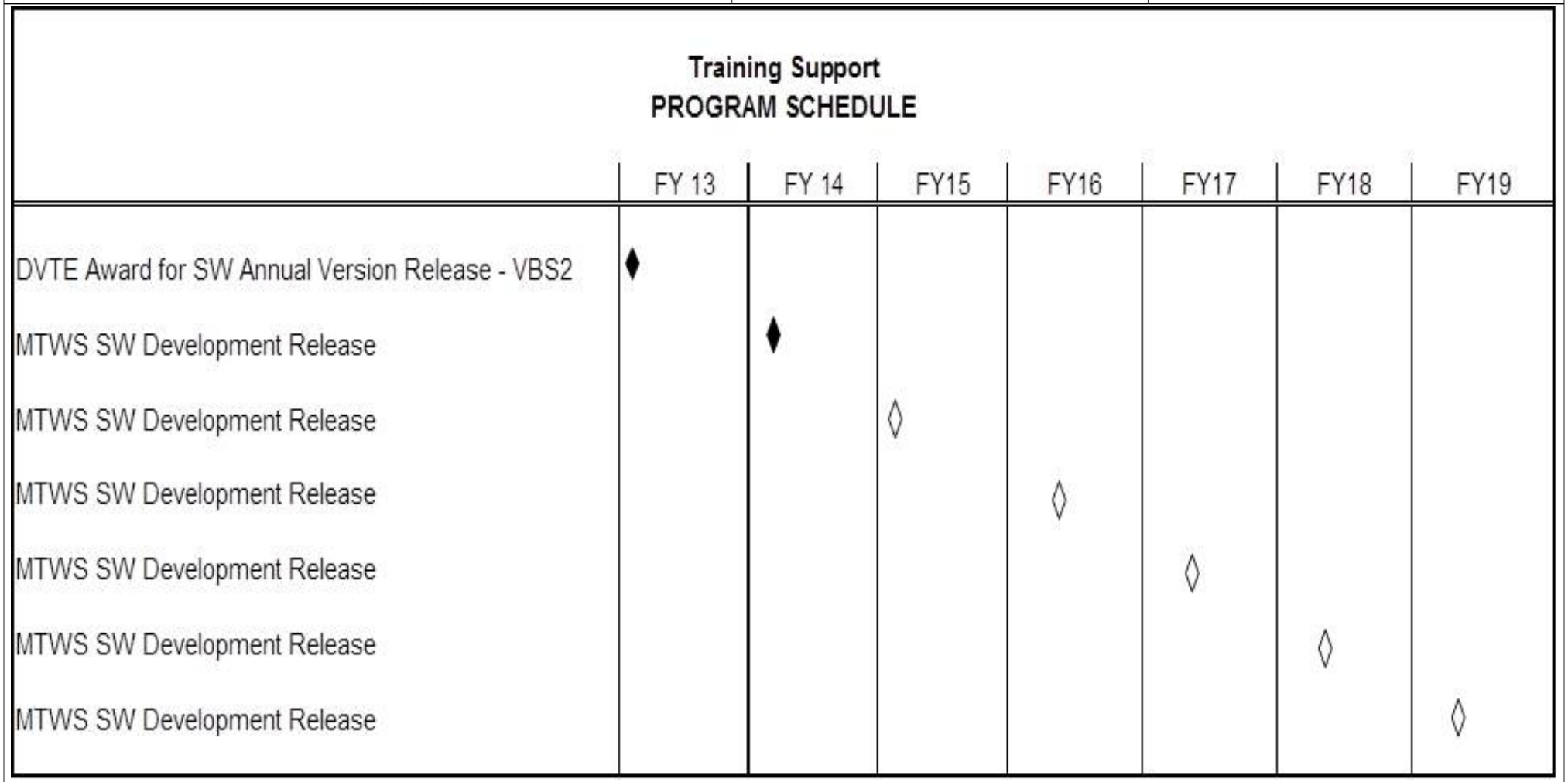

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2503 / *Initial Issue*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2503: *Initial Issue*	49.932	5.475	9.142	5.498	-	5.498	5.119	6.185	6.173	4.857	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Family of Combat Equipment Support and Services provides research, development, test and evaluation on low cost items with emphasis on non-developmental/ commercially 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 Procurement Marine Corps and the Operation and Maintenance Marine Corps lines for Individual Combat Equipment, Medical Equipment and Shelters. The focus is to provide state of the art combat equipment (e.g. lightweight helmet, sleeping bags, load bearing systems, etc.), medical equipment (e.g. Authorized Medical Allowance (AMAL)/Authorized Dental Allowance (ADAL), Enroute Care, Mobile Medical Monitors, etc.), and Family of Shelters (soft wall, different frames and fabrics, etc.). The benefits will be reduced logistics, less weight, improved combat effectiveness, better echelon I and II care for Marines, improved individual and unit protection, tactical mobility, etc. The employment of state-of-the-art equipment will ensure Marines are equipped with the best items that technology can offer.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: *Clothing and Flame Resistant Organizational Gear	0.718	0.796	0.664
Articles:	-	-	-

FY 2013 Accomplishments:

Continued test and evaluation efforts to utilize technological advances in fabric and design for the Marine Corps Combat Utility Uniform (MCCUU) and the Enhanced Fire Resistant Combat Essemble (EFRCE) in conjunction with focus groups and lessons learned from OIF and OEF to improve the evolving configuration. Finalized fabric lab testing and choose a vendor to achieve final designs. Continued to evaluate Marine Corps Uniform Board (MCUB) and CMC uniform requirement for future upgrades.

FY 2014 Plans:

Flame Resistant Organizational Gear (FROG) will continue to seek improvements and take advantage of advanced technology in fabric and uniform durability, design, and test footwear. Continue to evaluate and support new Combat Development and Integration (CD&I) office uniform initiatives from the Marine Corps Uniform Board (MCUB) and CMC. Begin Flame and Footwear research, development and testing for the tropical boot and Male Dress Cap.

FY 2015 Plans:

Flame Resistant Organizational Gear (FROG) will continue to seek improvements and take advantage of advanced technology in fabric and uniform durability, design, and test footwear. Continue to evaluate and support new Combat Development and

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Integration (CD&I) office uniform initiatives from the Marine Corps Uniform Board (MCUB) and CMC. Continue Flame and Footwear research, development and testing for the tropical boot.			
Title: *Family of Mountain Cold Weather Clothing & Equipment (FMCWCE)	1.176	1.283	0.930
Articles:	-	-	-
FY 2013 Accomplishments: Continued to evaluate product improvements through research of advanced technology necessary to continue modernization efforts within the MCWCE capabilities. Continued to research and develop the capability set of clothing and equipment to facilitate MAGTF operations in mountainous and cold weather environments. Evaluated new capabilities such as advanced Military Ski System, Extreme Cold Weather Sleep System, Glove, Improved Fleece Jacket, and Extreme Cold Weather Boot for increased environmental protection, versatility, and survivability. Completed the evaluation of the All Purpose Liner and Improved Sleeping Mat. Implemented rapid technological advances in the outdoor commercial market within the stated requirements. Researched, developed, and evaluated reduced load while increasing insulation values of Fleece, Extreme Cold Weather Parkas, and Extreme Cold Weather Boots.			
FY 2014 Plans: Continue research and development of current industry technology to further increase existing equipment effectiveness while lightening the load of the individual Marine in both weight and volume. Further the research, develop, and evaluate reduced load while increasing insulation values of Desert and Woodland Fleece, Cold Weather Gloves, and Extreme Cold Weather Boots. Begin the development of the Marine Corps Cold Weather Infantry Kit and over the snow mobility in both snowshoes, skis, and sleds and Three Season Sleep System.			
FY 2015 Plans: Continue research and development of industry technology to further increase existing equipment effectiveness while lightening the load of the individual Marine in both weight and volume. Research, develop, and evaluate reduced load while increasing insulation values of Desert and Woodland Fleece, Extreme Cold Weather Parkas, and Extreme Cold Weather Boots. Additionally, equipment technology advances will drive the development of the Marine Assualt Climbers Kit (MACK) to effectively and safely negotiate horizontal and vertical obstacles. Continue the development of the Marine Corps Cold Weather Infantry Kit (MCCWIK) and over the snow mobility in both skis and sleds.			
Title: *Family of Improved Load Bearing Equipment	0.252	0.346	0.308
Articles:	-	-	-
FY 2013 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Continued to explore product improvements and advanced technology for the Family of Improved Load Bearing Systems. Completed testing and evaluation for durability of pouches, and specifications reviews. Continued testing for next generation Block II Individual Water Purification System (IWPS). ***FY 2014 Plans:*** Complete research, development and evaluation for Block II. Begin research and development for Block III IWPS de-salinization effort and freeze thaw testing. Continue to explore product improvements and advanced technology for the Family of Improved Load Bearing Systems. ***FY 2015 Plans:*** Continue research, development and evaluation for Blocks III IWPS de-salinization effort. Continue to explore product improvements and advanced technology for the Family of Improved Load Bearing Systems.			
Title: *Family of Individual Warfighter Equipment (formerly Combat Support Equipment) ***Articles:*** ***FY 2013 Accomplishments:*** Continued research, development and evaluation of product improvements and advanced technology necessary to facilitate modernization efforts within the IWE capabilities. Continued to test and evaluate the COTS and NDI products which are major components of the IWE program and are significantly improved annually by industry; leveraging industry initiatives is a major aspect of this program. Continued research and evaluation of advanced technology on the Martial Arts Kit, Mechanical Breachers Kit, and the Ultra High Intensity Illumination System. ***FY 2014 Plans:*** Continue to exploit industry's development of technological advances in Mechanical Breachers Kit and Waterproof Bags for USMC Pack. Continue to test and evaluate to ensure operational effectiveness of the IWE components. Continue the modernization of existing programs through Minor Modification, leveraging the technological advances of industry. ***FY 2015 Plans:*** Continue to exploit industry's development of technological advances in Mechanical Breachers Kit and Waterproof Bags for USMC Pack. Continue to test and evaluate to ensure operational effectiveness of the IWE components. Continue the modernization of existing programs through Minor Modification, leveraging the technological advances of industry.	0.127 -	0.144 -	0.105 -
Title: *Family of Field Medical Equipment ***Articles:*** ***FY 2013 Accomplishments:***	1.999 -	5.372 -	2.467 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Continued testing Commercial-Off-The-Shelf/Non-developmental (COTS/NOI) medical equipment items for the Enroute Care System, Forward Resuscitative Surgical System, and X-ray equipment to determine future viability in an operational environment. -Continued testing of medical equipment items to evaluate their functionality and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment. -Continued testing for possible application technology for insertion. -Completed testing of Hydrogen Peroxide Sterilizer. -Completed testing of mobile and ruggedized field X-ray units to replace current digital radiological units that have exceeded life expectancy. -Began Research and Development Studies on the application of Freeze Dried Pooled Plasma within the USMC Health Service Support organization. ***FY 2014 Plans:*** -Continue to test Commercial-Off-The-Shelf/Non-developmental (COTS/NOI) medical equipment items for the Enroute Care System, Forward Resuscitative Surgical System, and X-ray equipment to determine future viability in an operational environment. -Continue testing of medical equipment items to evaluate their functionality and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment. -Continue testing for possible application technology for insertion. -Complete Research and Development Studies on the application of Freeze Dried Pooled Plasma within the USMC Health Service Support organization. -Begin collaborative development efforts with other services on the Autonomous Critical Care System. ***FY 2015 Plans:*** -Continue to test Commercial-Off-The-Shelf/Non-developmental (COTS/NOI) medical equipment items for the Enroute Care System, Forward Resuscitative Surgical System, and X-ray equipment to determine future viability in an operational environment. -Continue testing of medical equipment items to evaluate their functionality and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment. -Continue testing for possible application technology for insertion. -Continue collaborative development efforts with other services on the Autonomous Critical Care System.			
Title: *Family of Shelters and Shelter Equipment (FSSE)	0.828	0.900	0.560
Articles:	-	-	-
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Completed evaluations of the Arctic Shelter for durability in harsh climatic environments and assessed the ability of an Infrantry Squad of 15 Marines wearing their individual cold weather combat gear and equipment to operate simultaneously inside the shelter. Continued testing of energy efficient LED light technologies for shelters and shelter equipment. ***FY 2014 Plans:*** Complete testing of energy efficient LED light technologies for shelters and shelter equipment. Begin testing of energy efficient technologies for new composite materiels for rigid wall shelters and energy efficient field heating systems. Begin development and testing for next generation heater capability for soft wall shelters. The current inventory of general purpose medium tents is adequate to meet mission requirements. ***FY 2015 Plans:*** Complete testing of energy efficient technologies for new composite materiels for rigid wall shelters and energy efficient field heating systems. Complete testing of next generation heaters for the Arctic Shelter and compatibility with soft wall shelters in inventory. Continue enhancing energy efficient technologies for shelters, lighting and shelter equipment. The current inventory of general purpose medium tents is adequate to meet mission requirements.			
Title: *Family of Combat Field Feeding	0.375	0.301	0.464
Articles:	-	-	-
FY 2013 Accomplishments: Researched and tested multiple solutions to reduce the footprint size for the Tray Ration Heater System. Began to analyze, evaluate, and test concepts for a new and improved sanitation system. ***FY 2014 Plans:*** Continue testing options to reduce the footprint size of the current Tray Ration Heater System. Continued to analyze, evaluate, and test concepts for a new and improved sanitation system. ***FY 2015 Plans:*** Continue testing options to reduce the footprint size of the current Tray Ration Heater System. Continue to analyze, evaluate, and test concepts for a new burner. Begin to analyze, evaluate, and test concepts for a new burner.			
Accomplishments/Planned Programs Subtotals	5.475	9.142	5.498

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/6522-01: *Field Medical Equipment*	7.832	19.823	-	-	-	-	-	-	-	-	101.733

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/6613: *Combat Field Feeding System*	8.354	2.390	-	-	-	-	-	-	-	-	46.301
• PMC/6522-02: *Family of Shelters & Shelter Equipment*	38.676	3.306	-	-	-	-	-	-	-	-	41.982

Remarks

D. Acquisition Strategy

Family of Ballistic Protection Systems, Family of Mountain Cold Weather Clothing and Equipment, Family of Improved Load Bearing Equipment, Family of Individual Warfighter Equipment, Clothing and Flame Resistant Organizational Gear, 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 Contracting Directorate, 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 Quantities.

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.

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 Non-Developmental Items (NDI) and adopt Commercial-Off-the-Shelf (COTS) items.

Combat Field Feeding Systems: This program utilizes various acquisition strategies and leverages heavily on current developments and technology in commercial industry. As a result, the government's RDTE phase is relatively short. Contracting is performed by either Marine Corps Systems Command Contracting Directorate, 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 Quantities.

E. Performance Metrics

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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*

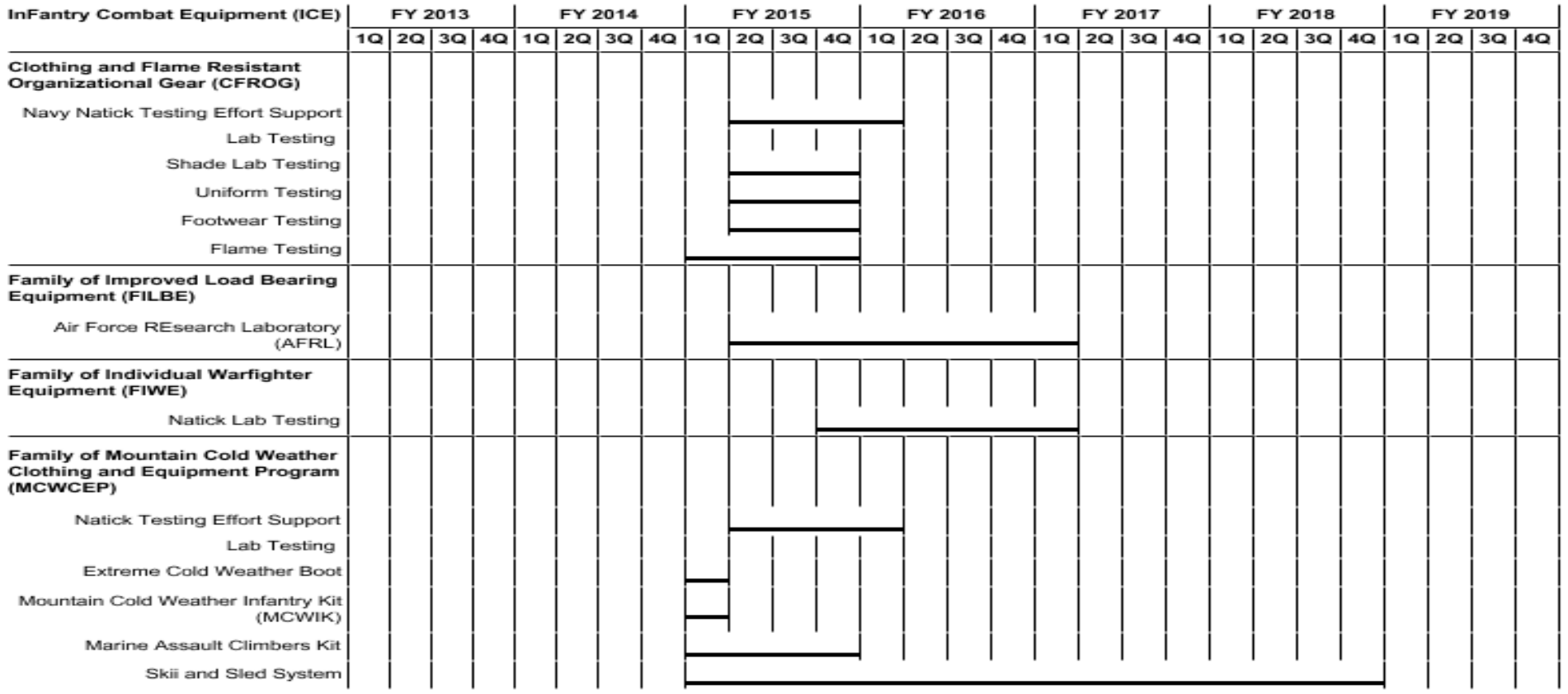

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2513 / *Body Armor*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2513: *Body Armor*	33.387	6.184	0.572	3.431	-	3.431	4.867	4.830	4.585	4.688	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

This project was previously in Project 2503 Initial Issue under Family of Ballistic Protection.

A. Mission Description and Budget Item Justification

Body Armor Development (BAD) provides the most technologically advanced ballistics protection at the lightest weight in the world today. With current combat operations, these items have generated considerable Congressional and public interest because the items are considered life-saving equipment. When evaluated in total, BAD programs provide the critical systems that save lives, reduce the severity of combat injuries, and increase combat effectiveness by keeping more Marines in the fight. A key component of all of the BAD programs is that as new threats emerge on the battlefield, BAD equipment must constantly adapt to meet these new threats. BAD programs are truly a force multiplier on the battlefield of today and tomorrow. It includes Modular Scalable Vest (MSV), Enhanced Small Arms Protective Inserts (ESAPI), Helmet, and Eye Protection.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Body Armor Development	6.184	0.572	3.431
Articles:	-	-	-

FY 2013 Accomplishments:

Developed and tested new commercial technologies to further develop hard and soft body armor systems to include a modular scalable design in order to reduce the number of armor systems, system weight, and increase the survivability, lethality and mobility of the individual Marine. Completed the initial phase to develop both torso, pelvic and headborne systems to assess blunt trauma/shock forces on the body and how ballistic materials and designs can afford the most protection while reducing weight and lightening the load. Completed the initial phase of research for active and passive hearing protection products that provide a sense of presence and protection against transient impact noise, and blocks and/or reflects harmful blast shock wave in the ear canal. Further reviewed and initiated hard armor development for the Enhanced Capability Helmet.

FY 2014 Plans:

Continue to develop both the Headborne and Modular Scalable Vest (MSV) systems to increase the survivability, lethality and mobility of the individual Marine. Continue to research active and passive hearing protection products that provide a sense of

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
presence and protection against transient impact noise and blocks and/or reflects harmful blast shock wave in the ear canal. Complete hard armor development for the Enhanced Capability Helmet. ***FY 2015 Plans:*** Continue to develop both the Headborne and Modular Scalable Vest (MSV) systems to increase the survivability, lethality and mobility of the individual Marine. Continue to research active and passive hearing protection products that provide a sense of presence and protection against transient impact noise and blocks and/or reflects harmful blast shock wave in the ear canal. The increase in funding from FY14 to FY15 supports testing.			
Accomplishments/Planned Programs Subtotals	6.184	0.572	3.431

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Marine Corps Body Armor 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, PdM-Infantry Combat Equipment (ICE) uses a broad array of government and contractor performers to achieve the desired end state. This includes efforts being conducted in conjunction with partnered government performers, research and development contracts and partnership intermediaries where applicable. The Marine Corps also seeks to leverage advancements in industry capabilities to rapidly field non-developmental and commercially available off the shelf armor solutions after confirming performance through characterizing ballistic performance and expected subjective user acceptance as measured during user evaluations.

E. Performance Metrics

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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*

Family of Ballistic Protection Systems (FBPS)
Planning Schedule

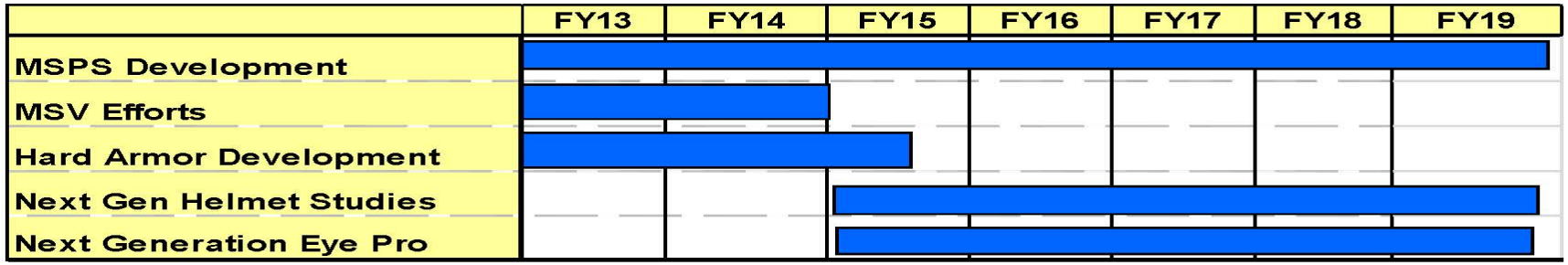

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy												Date: March 2014
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*				Project (Number/Name) 2928 / *Exp Indirect Fire Gen Supt Wpn Sys*			
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
2928: *Exp Indirect Fire Gen Supt Wpn Sys*	13.189	2.270	2.391	1.953	-	1.953	2.768	2.731	2.583	2.369	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

High Mobility Artillery Rocket Systems (HIMARS) is a C-130 transportable, wheeled, indirect fire, rocket/missile system capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM). The system includes one launcher, two Re-Supply Systems, and the MFOM. HIMARS will provide the Fleet Marine Force 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 and distributed operations. HIMARS is a significant improvement over previously fielded ground fire support systems. During a 24 hour period, the system is expected to conduct multiple moves and multiple fire missions. Guided Multiple Launch Rocket System (GMLRS) is the primary munition for units fielded with the HIMARS and MLRS rocket and missile platforms. GMLRS provides close, medium, and long range precision and area fires to destroy, suppress, and shape threat forces and protect friendly forces against cannon, mortar, rocket and missile artillery, light material and armor, personnel, command and control, and air defense surface targets. GMLRS integrates guided and control packages and an improved rocket motor achieving greater range and precision accuracy, requiring fewer rockets to defeat targets, thereby reducing the logistics burden.

The two fielded variants are GMLRS with Dual Purpose Improved Conventional Munitions (DPICM/Increment 1) and GMLRS Unitary (U/Increment 2), a 200 pound class high explosive warhead. The GMLRS U is the only variant currently in production, integrating a multi-mode fuse and high explosive warhead making it an all weather, low collateral damage, precision strike rocket. GMLRS U expands the MLRS target set into urban and complex environments by adding point, proximity, and delay fusing modes. GMLRS U are being fired in support of Overseas Contingency Operations (OCO), and has demonstrated high effectiveness and low collateral damage while supporting Marines in combat. A third variant of GMLRS, the alternative warhead (AW/Increment 3) is being developed to replace DPICM and meet the requirements outlined in a 25 June 2008 cluster munitions policy, which requires all cluster munitions by 2019 to produce less than 1% Unexploded Ordinance (UXO) on the battlefield. HIMARS satisfies the Marine Corps requirement for an indirect fire system that is responsive, maneuverable, and is capable of engaging targets at long range. The Reduced Range Practice Rocket (RRPR) includes training devices for tactical training, classroom training and handling exercises.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2013**	**FY 2014**	**FY 2015**
Title: HIMARS Testing	-	2.190	0.500
Articles:	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Description: Executed in conjunction with the U.S. Army, the Support Test and Evaluation Program for Marine Corps Principle End Items. The U.S. Army Program Office continues to provide improvements to these end items (e.g. alternate warheads). This funding will be used to provide adequate support and oversight to ensure testing supports Marine Corps requirements ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Execution will be in conjunction with the U.S. Army, the Support Test and Evaluation Program for Marine Corps Principle End Items. The U.S. Army Program Office provides improvements to these end items (i.e. alternate warheads). This funding will be used to provide adequate support and oversight to ensure testing supports Marine Corps requirements for the following: Shipboard Shock & Vibration Testing: Shock testing will derive from MIL-S-901 (Near-Miss Shock Qualification using the WOX-7B shock machine) and vibration using MIL-STD-167-1. This test will be a 20 day event at Dahlgren, VA. Based on the minimal differences between GMLRS Alternative Warhead (AW),GMLRS DPICM and GMLRS U and analysis of Previous Hazards of Electromagnetic Radiation to Ordnance (HERO) testing results for GMLRS DPICM and GMLRS U NSWCDD Electromagnetic Effects Branch has determined that the Marine Corps will formalize the analysis of munition configurations and previous test results and submit a report on their findings by utilizing Army Subject Matter Expertise and prior test findings. ***FY 2015 Plans:*** Guided Multiple Launch Rocket System (GMLRS) follow on testing will consist of any testing required due to deficiencies discovered during US Army E3 testing at Redstone Test Center (RTC) or during Shipboard Shock & Vibration testing at NSWCDD and as required by the Marine Corps Systems Command and NSWCDD.			
Title: HIMARS AWP Test Articles	2.091	-	-
Articles:	3.000	-	-
FY 2013 Accomplishments: Procured three (3) GMLRS Alternative Warhead (AW) Rocket pods and associated Performance Oriented Packaging (POP) boxes for USMC shipboard shock and vibration testing. Each pod will contain one live rocket and five mass simulators. The live rockets will be located in tube #4 and the other five tubes shall contain the mass simulators. The live rockets will be GMLRS AW variants with all electronics, energetics and fuzing. Testing will be conducted in FY14 at Naval Surface Warfare Center, Dahlgren Division (NSWC/DD). ***FY 2014 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
N/A ***FY 2015 Plans:*** N/A			
Title: HIMARS Fire Control System Obsolescence	-	-	1.453
Articles:	-	-	-
FY 2013 Accomplishments: N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** Evaluation efforts that focus on improving HIMARS readiness, reliability and maintainability by eliminating obsolete parts and reducing the number of Line Replaceable Units (LRUs) by consolidating Fire Control System functions.			
Title: HIMARS Program Support	0.179	0.201	-
Articles:	-	-	-
Description: HIMARS is a joint program run from the Army Program Office in Huntsville, AL. Funding supports Program Management at Quantico, Marine Corps Liaison Officer at Army Program Office (Huntsville) and contractor support. Marine Corps onsite liaison officer resides at Huntsville to support joint acquisition and program planning. ***FY 2013 Accomplishments:*** HIMARS is a joint program run from the Army Program Office in Huntsville, AL. Funding supported Program Management at Quantico, Marine Corps Liaison Officer at Army Program Office (Huntsville) and contractor support. Marine Corps onsite liaison officer resides at Huntsville to support joint acquisition and program planning. ***FY 2014 Plans:*** HIMARS is a joint program run from the Army Program Office in Huntsville, AL. Funding supports Program Management at Quantico, Marine Corps Liaison Officer at Army Program Office (Huntsville) and contractor support. Marine Corps onsite liaison officer resides at Huntsville to support joint acquisition and program planning. ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	2.270	2.391	1.953

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/BLI 221200: *High Mobility Artillery Rocket System (HIMARS)*	84.829	5.467	19.474	-	19.474	19.512	36.082	39.932	36.632	Continuing	Continuing

Remarks

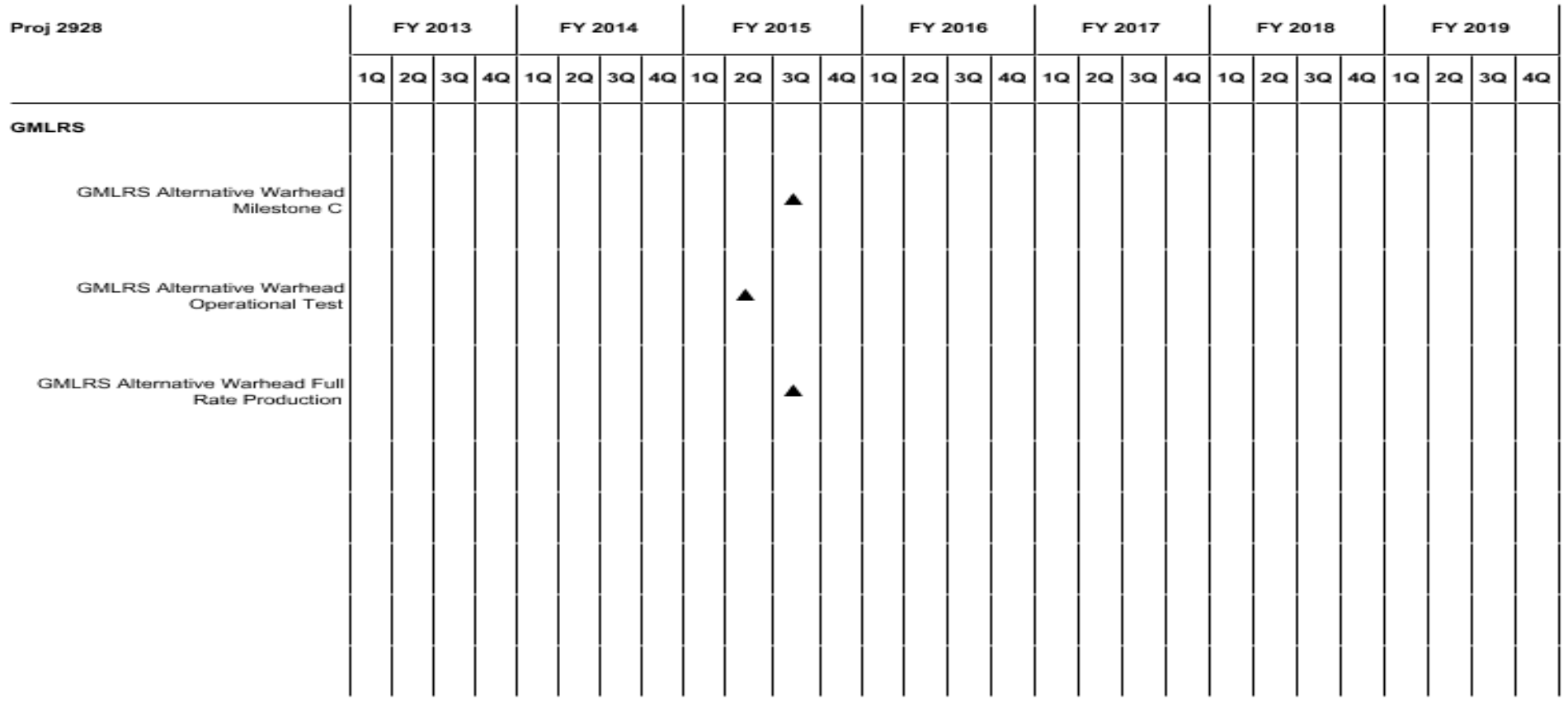
D. Acquisition Strategy

USMC HIMARS is procuring the Army rocket launcher, the current/future Multiple Launch Rocket System Family of Munitions (MFOM) and a Medium Tactical Vehicle Replacement (MTVR) based Resupply System (truck(s) with associated trailer(s)). The Marine Corps launcher and ammo requirements closely match U.S. Army requirements. The U.S. Army HIMARS program received increased funding and is now an Acquisition Category (ACAT) IC level program. Marine Corps Resupply System requirements are unique. Accordingly, the Marine Corps is an integrator and must ensure the required warfighting capability is fielded to the Marine Corps operating forces. The USMC has aligned funds to reflect an emphasis on not only hardware development, but also the integration of these principle end items while providing associated evaluation and oversight, and the development of associated rocket munitions in conjunction with the Army. Additionally, the Marine Corps program is establishing the training and support methodologies that will result in associated skill sets required within the Marine Corps. The Marine Corps strategy is incorporating acquisition and capability upgrades to both the systems and rocket munitions. These improvements parallel the U.S. Army's acquisition strategy.

E. Performance Metrics

Milestone Reviews

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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*



2015PB - 0206623M - 2928

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy											Date: March 2014	
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 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
3098: *Fire Support System*	96.321	17.155	16.221	14.400	-	14.400	12.449	6.121	5.503	5.580	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project develops Joint and Marine Corps unique improvements to artillery fire support technology that supports the artillery triad of fires and fire support equipment. These initiatives include but are not limited to the following: the Expeditionary Fire Support System (EFSS), munitions development & testing (to include rocket munitions), as well as testing and development of the Family of Artillery Munitions (FAM), Common Laser Ranger Finder (CLRF) integrated capability, and the Modeled Meteorological Information Manager (MMIM).

EFSS is an all-weather, ground based indirect fire system designed to support the vertical assault element of the Ship-To-Objective Maneuver (STOM) force. The EFSS is defined as a Launcher, Mobility Platform (prime mover), Ammunition, Ammunition Supply Vehicle, and Technical Fire Direction and Control equipment necessary for orienting weapons to an azimuth of fire. EFSS supports irregular warfare and distributed operations.

FAM is used to develop and mature artillery munitions for the Marine Corps triad of fire.

The CLRF is a lightweight, eye-safe target laser rangefinder capable of being carried and employed by a single Marine. CLRF Integrated Capability (CLRF IC) is a replacement to the existing CLRF Suite of Equipment. CLRF IC provides the observer the ability to perform target detection, recognition, identification, and location determination in a suite of systems.

The Modeled Meteorological Information Manager (MMIM) will be the primary artillery meteorological capability at the artillery battalion and regiment providing the ability to create, receive, manage, and transmit near real time gridded meteorological information supporting artillery and target acquisition systems significantly enhancing the accuracy of meteorological information.

The Fire Support Mod Line is a set of Marine Corps efforts to address critical operational and logistics deficiencies in existing, fielded fire support/weapons systems and equipment. The line provides technical refresh, development of target acquisition, and artillery survey and meteorological systems. Funding is used to ensure Clinger Cohen Act (CCA) and Information Assurance (IA) requirements are met, execution of product improvements/modifications, and upgrades to system hardware and software for the Ground Counter Fire Sensor (GCFS), Marine Artillery Survey Set (MASS), Meteorological Station Group (MSG), Global Positioning System Survey (GPS-S) and the Improved Position Azimuth Determining System (IPADS), Lightweight Target Designator (LTD) and the CLRF as well as for upgrades, engineering change proposals, and modifications for guided munitions and fire control systems. Funding is also used for upgrades, engineering change proposals (ECPs) and modifications for guided munitions and fire control systems which falls within Fire Support Systems for the Marine Corps.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

The Internally Transportable Vehicle (ITV) is a program in this project that is a lightweight, highly mobile vehicle that provides a deployed Marine Air-Ground Task Force (MAGTF) with a ground vehicle internally transportable in the MV-22 and CV-22 tilt-rotor aircraft as well as the CH53-E and MH-47 aircraft. The ITV has two configurations: The Light Strike Vehicle (ITV-LSV) and EFSS Prime Mover (ITV-PM).

Insensitive Munitions Program's purpose is to field munitions that are insensitive munitions (IM) compliant.

Conventional Ground Ammunition project identifies and develops Insensitive Munitions (IM) Technologies to address IM shortfalls in new Marine Corps development or improvements to legacy Conventional Ground Ammunition 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 (IMSP) to address the identified IM technology needs of the Marine Corps.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Common Laser Range Finder (CLRF)	0.820	0.400	-
Articles:	-	-	-
Description: The Common Laser Range Finder (CLRF) is a lightweight, eye-safe target laser rangefinder capable of being carried and employed by a single Marine. CLRF Integrated Capability (CLRF IC) is a replacement to the existing CLRF Suite of Equipment. CLRF IC provides the observer the ability to perform target detection, recognition, identification, and location determination in a suite of systems. There is no funding required in FY15 because the Engineering and Manufacturing Development phase will be completed in FY14.			
FY 2013 Accomplishments: Continued CLRF IC development efforts in the Technology Development Phase focusing on weight reduction and integration of a precise, non-magnetic azimuth sensing capability and started the Engineering and Manufacturing (E&M) Development Phase.			
FY 2014 Plans: CLRF IC development efforts continue in the Engineering and Manufacturing Development Phase and are scheduled to be completed. Source selection is planned for 4Q FY14.			
FY 2015 Plans: N/A			
Title: Modeled Meteorological Information Manager (MMIM)	0.238	0.249	0.228
Articles:	-	-	-
Description: The Modeled Meteorological Information Manager (MMIM) will be the primary artillery meteorological capability at the artillery battalion and regiment providing the ability to create, receive, manage, and transmit near real time gridded meteorological information supporting artillery and target acquisition systems significantly enhancing the accuracy of meteorological information. MMIM will save over $1.3 million in annual operations, maintenance, and fuel costs by eliminating the			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
requirement for 42 M1152 High Mobility Multi-purpose Wheeled Vehicles, 21 M101A3 Trailers and 21 OV-103 Generator Groups associated with the current legacy capability. ***FY 2013 Accomplishments:*** Completed integration of the GFS Model into the Core Software application to modernize the system and extend the service life. ***FY 2014 Plans:*** Supporting the Army (progam PICA) in their development of the next generation MMIM. ***FY 2015 Plans:*** Testing and finalization of the MMIM is planned to support final software development and information assurance activities.			
Title: Expeditionary Fire Support Systems (EFSS) ***Articles:*** ***Description:*** EFSS is an all-weather, ground based indirect fire system designed to support the vertical assault element of the Ship-To-Objective Maneuver (STOM) force. EFSS is defined as a Launcher, Mobility Platform (prime mover), Ammunition, ammunition Supply Vehicle, and Technical Fire Direction and control equipment necessary for orienting weapons to an azimuth of fire. EFSS supports irregular warfare and distributed operations. ***FY 2013 Accomplishments:*** Upgraded EFSS weapon system, specifically digitization (there is currently a communications gap to the system) to support the guided rounds. Developed extended range guided ammunition. Developed and tested hardware for the guided rounds and had the various field activities test the hardware. Integrated ballistics and firing tables (software development) and qualified energetics. Additionally, FY13 R&D was used to incrementally fund the development of the Precision Extended Range Munition (PERM). ***FY 2014 Plans:*** FY14 R&D is being used to incrementally fund the development of the Precision Extended Range Munition (PERM). The increase in FY14 funding will support the Government conduct of the PERM demonstration test. ***FY 2015 Plans:*** FY15 R&D will be used to complete PERM demonstration testing and conduct engineering and safety analysis of the demonstration test results.	6.741 -	11.887 -	11.618 -
Title: Fire Support Mods (FSM) ***Articles:*** ***Description:*** Funding is used for upgrades, engineering change proposals (ECP), and modifications to system hardware and software for the Ground Counter Fire Sensor (GCFS), Marine Artillery Survey Set (MASS), Meteorological Station Group (MSG),	1.892 -	1.979 -	1.747 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Global Positioning System Survey (GPS-S), the Improved Position Azimuth Determining System (IPADS), and the Joint Terminal Attack Controller-Laser Target Designator (JTAC-LTD) as well as technical refresh for target acquisition, and artillery survey and meteorological systems. Funding is also used for upgrades, engineering change proposals (ECPs) and modifications for guided munitions and fire control systems which falls within Fire Support Systems for the Marine Corps. ***FY 2013 Accomplishments:*** Funding was used for development and testing of event classification for GCFS. ***FY 2014 Plans:*** Software Integration Support: Requirements to transmit information digitally to support current artillery and target acquisition systems dictates that survey, meteorological, and targeting information conform to current and anticipated established variable message formatting to ensure continued compatibility with communication and fire support systems. The funding for this is being provided to ARDEC to update and integrate digital message formats from the IPADS, GCFS & MMIM to meet required standards associated with new digital transmission kernels. FSS IA Support: This funding is being used to meet the Clinger-Cohen requirements for FSS systems. Support is required to develop & conduct IA activities, Develop DoD required architecture and Information Support plans. Acoustics Analysis: This funding is supporting the analysis of the current acoustic capability to determine sustainment, enhancement, suitability and affordability opportunities associated with continued development of a system that meets the CPD & MROC validated capability. ***FY 2015 Plans:*** FY15 RDTE will be used to develop GCFS digital communications. FY15 RDTE will be used to develop an ECP to begin transitioning the AIM FNC into the baseline CLRF IC system.			
Title: Family of Artillery Munitions (FAM) ***Articles:*** ***Description:*** FAM - Efforts include acquisition planning for future munitions, replacement of existing stockpiles, and providing technologically enhanced artillery munitions in order to mitigate/fill capability gaps in range, accuracy, and lethality and reduce undue logistical burden. Additionally, the program office addresses Weapon System Explosives Safety Review Board (WSESRB) requirements for naval transportation issues for all artillery projectiles, propellants, and fuzes. ***FY 2013 Accomplishments:***	0.308 -	0.333 -	0.307 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Received SSSTRP approval for UMR, JSWSRB approval for UMR, FISTRP approval for UMR. First USMC UMR Quantities sent to Crane, (Excalibur 1a-1 and 1a-2) Lithium Battery Package approval, Shock Acceptance approval, (Excalibur 1b) Completed SET-S2 and SET-P2 Testing. Completed Insensitive Munitions (IM) Tests, Passed IOT&E. ***FY 2014 Plans:*** Ammunition CATT I/II development at Aberdeen Proving Ground. Actively monitor and provide funding for U.S. Army artillery ammunition development programs in order to leverage and influence Army developmental efforts. ***FY 2015 Plans:*** FY15 Plans - Actively monitor and provide funding for U.S. Army artillery ammunition programs in order to leverage and influence Army developmental efforts.			
Title: Insensitive Munitions	1.086	-	-
Articles:	-	-	-
Description: All DoD services are required to field munitions that are insensitive munitions (IM) compliant. IM compliancy is measured by the performance of munitions to six tests; Fast Cook-Off, Slow Cook-Off, Bullet Impact, Fragment Impact, Sympathetic Detonation, and Shape Charge Jet. Services are required to submit IM Strategic Plans annually delineating how they intend on executing their Service IM effort to maximize IM improvements to both new development and legacy munitions. These IM Strategic Plans, Supporting Plan of Actions, and Milestones, with funding trial, are submitted to the JROC, demonstrating each Service's commitment to the continuing effort to improve IM, for approval. In order to achieve the system's IM performance, a weapon system's developer must have new technology to apply to its poorly performing IM system. Under this program, the USMC invests in IM technology which will improve its existing munitions IM reactions and complies with the OSD mandate for maximum feasible IM compliance. ***FY 2013 Accomplishments:*** With the current level of funding the USMC is supporting five projects: (1) LAW FFE IM Propulsion - Developed two venting concepts utilizing eutectic alloys to vent the rear countermass fluid prior to propellant gas build up - Developed test plans and instrumentation configurations for baseline propulsion system testing and executed baseline testing (2) Multi Point Initiation System - Conducted modeling & simulation efforts that recreated JIMTP multi-point array tests. - Down-selected explosive candidates for further testing; - Conducted initial array testing with IMX-104 (3) Micro Electro Mechanical System Fuzing - Developed a tactical charge holder that contains the explosive ink and MEMS fuze.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
- Developed a piezoelectric energy harvester to energize the entire fuze. (4) Nano-RDX Booster - Scaled up Nano-RDX material and pressed into boosters - Completed Initiation reliability testing with fuze and PBXN-114 (5) IM Compliant 120mm Tail Charge - Working Interior Ballistics modeling for the 120mm EFSS - Completed candidate designs for the composite tail charge assembly ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Title: Family of Internally Transportable Vehicle (FITV) ***Articles:*** ***Description:*** Internally Transportable Vehicle (ITV) program fields expeditionary vehicles to ground units to support various operations. Provides the Marine Air-Ground Task Force (MAGTF) ground combat units with a vehicle transportable in the MV-22 and CV-22 tilt-rotor aircraft as well as the CH53-E and MV-47 aircraft. The ITV is an integral part of the Expeditionary Fire Support System (EFSS). ***FY 2013 Accomplishments:*** Initiated testing of safety and reliability improvements for the ITV. These efforts included: Prime Mover Drive Shaft / U-joint Improvements, Rear Steer Improvements, Air Box Redesign, Brake Light flicker and Battery Cutoff Switch. Initiated engineering and programmatic support. ***FY 2014 Plans:*** Continued safety and reliability enhancements in support of ITV. ***FY 2015 Plans:*** N/A	6.070 -	0.214 -	- -
Title: Conventional Ground Ammunition ***Articles:*** ***Description:*** All DoD services are required to field munitions that are insensitive munitions (IM) compliant. IM compliancy is measured by the performance of munitions to six tests; Fast Cook-Off, Slow Cook-Off, Bullet Impact,	- -	1.159 -	0.500 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Fragment Impact, Sympathetic Detonation, and Shape Charge Jet. Services are required to submit IM Strategic Plans annually delineating how they intend on executing their Service IM effort to maximize IM improvements to both new development and legacy conventional ground ammunition. These IM Strategic Plans, Supporting Plan of Actions, and Milestones, with funding trial, are submitted to the JROC, demonstrating each Service's commitment to the continuing effort to improve IM characteristics of Conventional Ground Ammunition, for approval. In order to achieve the system's IM performance, the Conventional Ground Ammunition developer/owner must have new technology identified and available to address IM shortfalls at the onset of the ammunition development or available for insertion during improvement opportunities for legacy ammunition. Under this program, the USMC invests in IM technology which will improve its existing munitions IM reactions or ability to reliably initiate IM technologies and complies with the OSD mandate for maximum feasible IM compliance. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** (1) Fire-From-Enclosure Rocket IM Propulsion (509K @ U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) - Final propellant iteration development (Test Material) - Propellant Sensitivity Testing - Engineering IM Tests - Full Scale IM Testing - Ballistic Testing (2) Multi Point Initiation System (100K @ Naval Surface Warfare Center Indian Head, Indian Head, MD) - Additional multi point array design and reliability testing - Go/No-Go Billet Testing - Advanced Characterization - MPI/Meduim Caliber incorporation guidelines development (3) Micro Electro Mechanical System Fuzing (200K @ Naval Surface Warfare Center Indian Head, Indian Head, MD) - Laboratory/Field survivability testing of all up configuration - All-Up Round Fabrication (Design improvements based on initial testing) - Live Fire Demonstration (Functionality & Survivability) (4) IM Compliant 120mm Tail Charge (350K @ U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) -Slow Cook-Off Testing to determine auto-ignition temperature of components -CHEETAH Modeling of propellant			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
-Propellant Characterization Tests (Closed Bomb, Mechanical Properties, Heat Flow Calorimetry) -Fiber Reinforced Plastic Fin Boom development ***FY 2015 Plans:*** (1) Fire-From-Enclosure Rocket IM Propulsion (250K @ U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) - Venting design development - Eutectic material proof of concept - Slow Cook-Off testing (design verification/improvement) - Final vent design verification (2) IM Compliant 120mm Tail Charge (250K @ U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) - Continue Propellant Characterization assessments/tests - Continue Fiber Reinforced Plastic Fin Boom development & testing			
Accomplishments/Planned Programs Subtotals	17.155	16.221	14.400

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/206400: *Expeditionary Fire Support Systems*	2.499	0.589	5.742	-	5.742	5.542	7.024	0.100	0.101	-	108.062
• PMC/473300: *Common Laser Range Finder (CLRF)*	3.242	0.001	8.178	-	8.178	5.203	9.523	10.778	9.779	-	46.739
• PMC/473301: *Modeled Meterological Information Manager (MMIM)*	1.500	0.250	0.250	-	0.250	0.450	0.500	0.509	0.466	-	8.261
• PMC/473302: *Fire Support Mods*	2.567	3.498	3.432	-	3.432	3.541	3.650	3.713	3.788	-	73.700
• PMC/523000: *Items less Than $5 Million*	2.784	2.885	2.964	-	2.964	3.018	3.198	3.259	3.325	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.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

Efforts that fall under the Expeditionary Fire Support System (EFSS) funding line include; The EFSS system; the High Explosive Rocket Assisted Projectile (HE-RAP); and the Precision Extended Range Munition (PERM). The strategy for HE-RAP consists of procuring 350 HE-RAP test articles that can be utilized to conduct some minor characterization testing and data gathering for future Marine Corps operations. The acquisition approach for PERM is being conducted in two phases; In Step 1, two CPFF contracts were awarded to two vendors for the development and delivery of production representative rounds. Step 1 allows the development of existing technology, the management of technology risks, and demonstration of PERM designs prior to Milestone C (MS C). In Step 2 one FFP contract will be awarded for the production and delivery of the Total Munitions Requirement (TMR) and a priced option for the procurement of the vendor's Technical Data Package (TDP) for the approved material solution. PERM will supplement the capability of EFSS by increasing the effective range from 8km to up to 20 km.

Currently the Family of Artillery Munitions (FAM) Program includes four (4) artillery munitions which are being developed by the Army. The Army is in possession of 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; XM1156 Precision Guidance Kit (PGK), Excalibur, Joint Extended Range Illumination Projectile (JERIP), and XM1128 155mm RAP Round. Each munitions status is tracked to ensure Marine Corps requirements are satisfied throughout the systems lifecycle. The Marine Corps guides WESRB certification to bring ordnance from the Army into the Marine Corps inventory. Fire power enhancement used selected upgrades from Army developmental programs to create a system that more readily meets Marine Corps requirements.

CLRF-IC will be procured using competitive contract strategy upon completion of the Engineering Manufacturing Development phase.

MMIM was procured and is managed by the US Army. The Marine Corps is an active participant in the Army program.

Fire Support Mods: A Sole Source contract was awarded to upgrade the GCFS command post computer and procure an Interface Control Document that will allow the program office to complete the digital communications requirement using competitive contracting. Limited research and analysis will be done as necessary to support ECPs for the MASS, IPADS and miscellaneous targeting devices.

The ITV Program will identify existing commercial off-the-shelf (COTS), government off-the-shelf (GOTS), and military off-the-shelf (MOTS) components to improve ITV reliability and safety by utilizing the Nevada Automotive Test Center (NATC).

The Insensitive Munitions Program is intended to invest in technologies that will improve the IM responses of currently fielded USMC priority munitions items in accordance with the USMC IM Strategic Plan and the OSD mandate to field IM compliant munitions to the maximum extent practicable.

The Conventional Ground Ammunition strategy is to invest in Insensitive Munitions (IM) technologies to address IM shortfalls of priority programs identified in the bi-annual Marine Corps Insensitive Munitions Strategic Plan (IMSP). Once the IM technologies have been successfully demonstrated and matured, the intent is to insert the new technologies into new conventional ground ammunition development as well as provide opportunities to improve legacy munitions IM characteristics. The IM R&D effort directly addresses the mandated OSD requirement to obtain incremental IM improvement in pursuit of becoming fully IM compliant to the maximum extent practicable.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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*

E. Performance Metrics

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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*

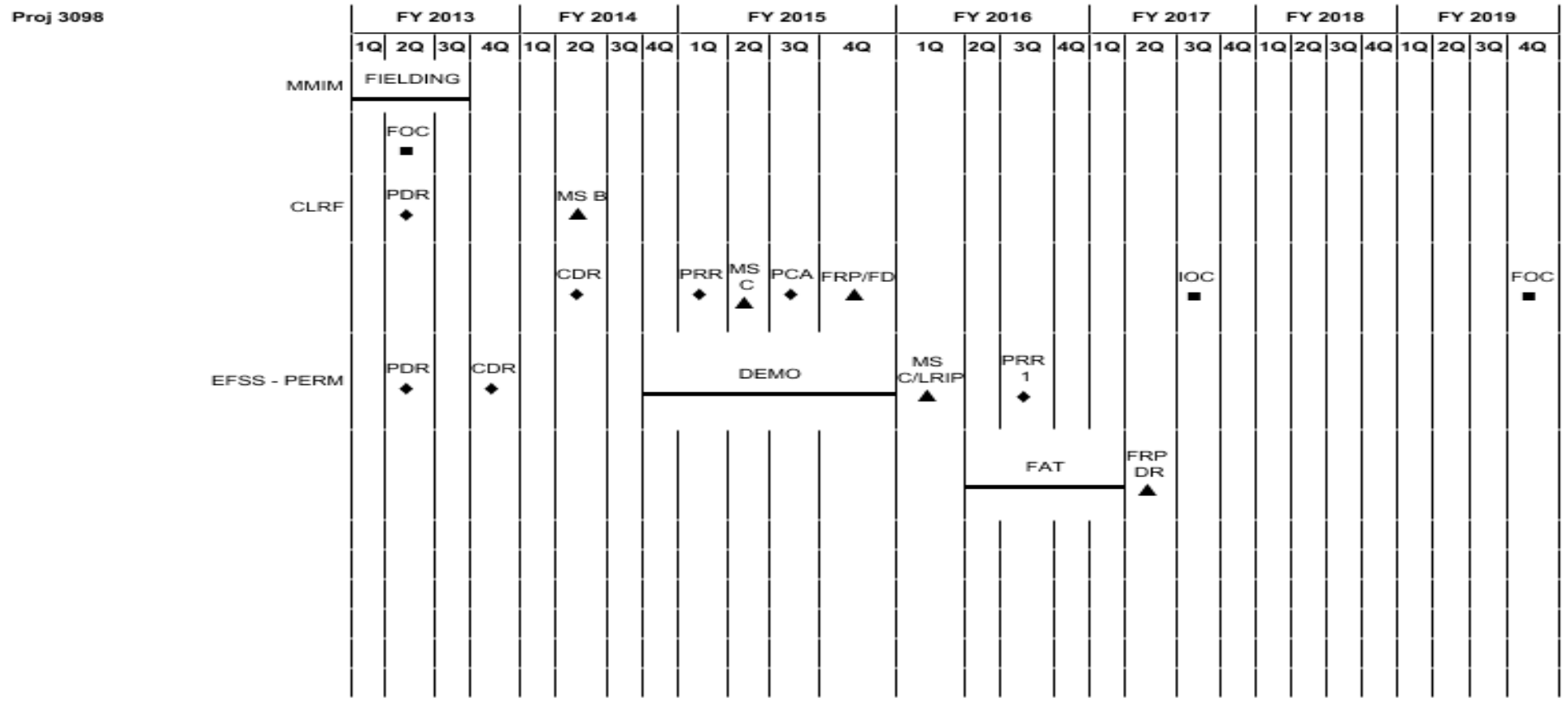


Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 4002 / *Family of Raid Reconnaissance*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
4002: *Family of Raid Reconnaissance*	2.684	0.259	0.528	0.496	-	0.496	0.508	0.507	0.526	0.536	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Project supports multiple airborne/parachuting and specialized reconnaissance related programs focusing on immediate capability enhancements to numerous insertion and personnel equipment shortfalls currently existing in reconnaissance units throughout the operating forces. This includes improving airborne capability equipment and items for direct action missions that use specialized raid equipment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Family of Raid/Reconnaissance Equipment (FRRE)	0.036	0.425	0.390
Articles:	-	-	-
FY 2013 Accomplishments: Completed testing the Advanced Combat Helmet for use as a Military Free Fall Helmet.			
FY 2014 Plans: Perform technology upgrades and evaluation of emerging reliability challenges presented by fielded systems, to include Automatic Activation Device. Participate with U.S. Army on Parachutist Navigation development.			
FY 2015 Plans: Continue to perform technology upgrades and evaluation of emerging reliability challenges presented by fielded systems, to include Automatic Activation Device and participate with U.S. Army on Parachutist Navigation development.			
Title: Underwater Reconnaissance Capability (URC)	0.223	0.103	0.106
Articles:	-	-	-
FY 2013 Accomplishments: Completed Tactical Hydrographic Survey Equipment (THSE) testing and documentation.			
FY 2014 Plans: Initiate research and development on an improved diver propulsion device.			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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 2013	FY 2014	FY 2015
Continue research and development on an improved diver propulsion device.			
Accomplishments/Planned Programs Subtotals	0.259	0.528	0.496

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PMC/6518: *AMPHIB SPT EQUIP*	13.072	4.827	4.418	-	4.418	6.473	5.503	4.775	4.882	-	61.140

Remarks

D. Acquisition Strategy

(U) Family of Raid and Reconnaissance Equipment (FRRE) acquisition strategy is to fund engineering changes and product upgrade testing and development for various Reconnaissance Special Purpose Equipment for aerial delivery, parachuting, and close quarter combat, to include the Parachutist's High Altitude Oxygen System (PHAOS); Automatic Activation Device (AAD); Tandem Offset Resupply Delivery System (TORDS)/Military Tandem Tethered Bundle (MTTB) System; and the Marine Individual Assault Kit (MIAK).

(U) Underwater Reconnaissance Capability (URC) acquisition strategy for the Tactical Hydrographic Survey Equipment (THSE) consists of competing the performance specification for a COTS or NDI solution using the trade-off source selection process for an IDIQ FFP contract.

E. Performance Metrics

Milestone reviews.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 9C85 / *Marine Personnel Carrier (MPC)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
9C85: *Marine Personnel Carrier (MPC)*	28.882	19.832	-	-	-	-	-	-	-	-	-	48.714
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Marine Personnel Carrier (MPC) satisfies the medium lift capability of the Amphibious Combat Vehicle (ACV)/Joint Light Tactical Vehicle (JLTV)/MPC triad. The MPC supports expeditionary maneuver warfare of the Ground Combat Element (GCE) and enhances Marine Operating Forces tactical and operational mobility on a platform that is highly mobile on land while maneuvering with all USMC wheeled and tracked combat, and tactical vehicles. MPC provides armored protection and lethality to protect the vehicle and support dismounted infantry in the attack, while providing payload to carry the infantry's combat loads, mission-essential equipment, and up to two days of supplies.

This program's requirement was deferred and does not have funding beyond FY2013. ACV Increment 1.1 (PE 0603611M, Project 0025) leverages and continues the work that was previously accomplished under the MPC program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Product Development	7.349	-	-
Articles:	-	-	-
FY 2013 Accomplishments: Completed studies and demonstration on COTS MPC vehicles to demonstrate capibilities such as, swim, survivability (blast), and human factors. Continued to maintain the MPC-TD which will inform the Capabilities Development Document (CDD).			
FY 2014 Plans: N/A			
FY 2015 Plans: N/A			
Title: Contract Advisory and Assistance Services	2.229	-	-
Articles:	-	-	-
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 9C85 / *Marine Personnel Carrier (MPC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Provided contractor technical, engineering and management support for program planning, program documentation, analysis and execution. Supported government laboratory vehicle technology development and evaluation including common digital integration facilitation efforts. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Title: In-House Technical Support	10.254	-	-
Articles:	-	-	-
FY 2013 Accomplishments: Continued in-house technical engineering and integrated logistics support for program planning, analysis and execution. Continued in-house digital architecture software design, development, and analysis efforts. Continued technology development and evaluations. Performed travel in support of the MPC program. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	19.832	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This requirement has been deferred and does not have funding beyond FY2013.

E. Performance Metrics

N/A