

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	188.098	23.883	20.999	20.729	-	20.729	17.373	14.085	15.052	13.861	Continuing	Continuing
0201: Logistical Veh Sys Replacement (LVSR)	36.046	2.212	0.385	0.261	-	0.261	0.267	0.237	0.211	0.215	Continuing	Continuing
2316: Combat Service Support Eng Equip	55.355	10.217	7.271	4.655	-	4.655	6.431	8.118	7.416	7.563	Continuing	Continuing
2509: Motor Transport Mod	37.066	2.776	6.978	2.064	-	2.064	1.595	1.208	1.224	1.249	Continuing	Continuing
2510: MAGTF CSSE & SE	12.648	4.179	4.930	9.167	-	9.167	7.285	3.167	4.461	4.053	Continuing	Continuing
2929: Testing Measuring Diag Equip & SE	6.120	1.897	0.248	0.516	-	0.516	0.544	0.580	0.622	0.636	Continuing	Continuing
9C90: MTRV Mod	40.863	2.602	1.187	4.066	-	4.066	1.251	0.775	1.118	0.145	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) provides funding for Marine Air-Ground Task Force requirements for Combat Service Support equipment improvement. It will enhance combat breaching capabilities of the ground combat elements, logistics, maintenance and transportation. The PE also provides improvements in all areas of Combat Service Support Equipment Vehicles by determining the replacement for the light fleet of vehicles. This includes projects such as: Alternative Power Sources for Communications Equipment (APSCE) which is a suite of devices that provide the commander with the capability to use existing power to operate his communication equipment, computers and peripheral equipment instead of using batteries or fossil fuel generators; the Marine Corps Family of Automatic Test Systems (ATS), formerly TETS, which provides automatic testing capability for use by technicians both in garrison and forward edge of the battlefield; improvements in all areas of the M1A1 main battle tank, LVSR & MTVR; the High Performance Capabilities for Military Vehicles Project which is dedicated to applying the best practices of the motor sports industry to military vehicles including engineering expertise, equipment and technology.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy				Date: February 2015	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0206624M I Marine Corps Cmbt Services Supt			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	35.647	20.999	23.666	-	23.666
Current President's Budget	23.883	20.999	20.729	-	20.729
Total Adjustments	-11.764	-	-2.937	-	-2.937
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.084	-			
• SBIR/STTR Transfer	-4.080	-			
• Program Adjustments	-	-	-7.193	-	-7.193
• Rate/Misc Adjustments	-	-	4.256	-	4.256
• Congressional Rescission Adjustments	-6.600	-	-	-	-
Change Summary Explanation					
The \$6.600M reduction in FY14 is due to a Congressional rescission. The \$2.937M reduction in FY16 is due to the rephasing of funding to align with the revised program schedules.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 0201 / Logistical Veh Sys Replacement (LVSR)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0201: Logistical Veh Sys Replacement (LVSR)	36.046	2.212	0.385	0.261	-	0.261	0.267	0.237	0.211	0.215	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Logistics Vehicle System Replacement (LVSR) is the USMC Marine Air-Ground Task Force (MAGTF) Heavy Lift Capability system. The Medium/Heavy Modification line funds numerous modifications and initiatives that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, and other issues that effect vehicle reliability, availability, maintainability and readiness. A proactive and focused approach ensures proper vehicle sustainment and life cycle management and it allows the flexibility to develop and implement improvements as needed to respond to the evolving needs of the Marine Corps.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development Articles: FY 2014 Accomplishments: Completed safety & ECP modification development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding supported the development of the Wrecker Underbody Improvement Kits (UIK) and Automatic Fire Extinguishing System (AFES) for the unarmored vehicles. Also developed Emergency Egress Windows for the LVSR Wrecker variant and 360 Degree Lighting for all variants (cargo, tractor, and wrecker). FY 2015 Plans: N/A FY 2016 Base Plans: Continue to support safety & ECP development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare as continual changes in threat environment requires an on-going and proactive approach. FY 2016 OCO Plans: N/A								1.962	-	0.131	-	0.131
								-	-	-	-	-
Title: Support Articles:								0.051	-	0.130	-	0.130
								-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 0201 / Logistical Veh Sys Replacement (LVSR)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Completed safety support required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding supported the Wrecker Underbody Improvement Kits (UIK) effort. -Completed Modeling & Simulation support for the LVSR.						
FY 2015 Plans: N/A						
FY 2016 Base Plans: Initiate ECP support safety required to meet the diverse environments of current and future operations of MAGTF Expeditionary Maneuver Warfare. Incorporating new safety upgrades that will protect the warfighter and LVSR vehicle from possible catastrophic events as warranted by continual changes in threat environment.						
FY 2016 OCO Plans: N/A						
Title: Test and Evaluation		0.199	0.385	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Completed testing events to support safety & ECP development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding supported the Wrecker 360 lighting & Emergency Egress Window follow-on testing efforts						
FY 2015 Plans: Continue testing events to support safety & ECP development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding will support the Stability Control testing.						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Accomplishments/Planned Programs Subtotals		2.212	0.385	0.261	-	0.261

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 0201 / Logistical Veh Sys Replacement (LVSR)			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• 505000: Motor Transport Modifications	1.579	0.469	2.310	-	2.310	1.785	1.357	1.976	2.024	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The LVSR program uses a two-phase, single-step acquisition approach rather than an evolutionary acquisition approach. Phase I developed the Cargo variant and Phase II developed the Tractor and Wrecker variants. The program is currently in sustainment utilizing RDT&E funding to address required ECPs to maintain relevancy on the battlefield and implement system requirements.											
E. Performance Metrics											
N/A											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 0201 / Logistical Veh Sys Replacement (LVSR)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Safety Mod Development	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.884	0.912	Jun 2014	-		0.066	Apr 2016	-		0.066	Continuing	Continuing	Continuing
LVSR ECP Development	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.000	1.050	May 2015	-		0.065	Apr 2016	-		0.065	-	1.115	-
Prior Years Cumulative Funding	C/FFP	Various : Various	17.398	-		-		-		-		-	-	17.398	-
Subtotal			18.282	1.962		-		0.131		-		0.131	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Engineer Change Support	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.743	-	Jun 2014	-		0.065	May 2016	-		0.065	Continuing	Continuing	Continuing
Modeling & Simulation	Reqn	NSWC : Indian Head, MD	0.000	0.024	Jun 2014	-		-		-		-	-	0.024	-
LVSR Safety Support	WR	ARL : Aberdeen, MD	0.000	0.027	Jul 2014	-		0.065	Jun 2016	-		0.065	-	0.092	-
Prior Years Cumulative Funding	Various	Various : Various	1.648	-		-		-		-		-	-	1.648	-
Subtotal			2.391	0.051		-		0.130		-		0.130	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR ECP Testing	SS/FFP	Oshkosh Corp : Oshkosh, WI	1.422	0.066	Jun 2014	-		-		-		-	-	1.488	-
LVSR Safety Testing	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.000	0.133	Aug 2014	-		-		-		-	-	0.133	-
LVSR ECP Testing	MIPR	ATC : Aberdeen, MD	0.000	-		0.385	Oct 2015	-		-		-	-	0.385	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 0201 / Logistical Veh Sys Replacement (LVSR)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	11.004	-		-		-		-		-	-	11.004	-
Subtotal			12.426	0.199		0.385		-		-		-	-	13.010	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	2.947	-		-		-		-		-	-	2.947	-
Subtotal			2.947	-		-		-		-		-	-	2.947	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			36.046	2.212		0.385		0.261		-		0.261	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy																Date: February 2015												
Appropriation/Budget Activity 1319 / 7												R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt								Project (Number/Name) 0201 / Logistical Veh Sys Replacement (LVSR)								
Proj 0201	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	Safety																											
	ECP																											
									Testing																			
2016PB - 0206624M - 0201																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>	Project (Number/Name) 0201 / <i>Logistical Veh Sys Replacement (LVSR)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 0201</i>				
Safety Mod Development	1	2014	4	2020
ECP Development	1	2014	4	2020
Stability Testing	1	2016	3	2016

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2316 / Combat Service Support Eng Equip			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2316: Combat Service Support Eng Equip	55.355	10.217	7.271	4.655	-	4.655	6.431	8.118	7.416	7.563	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The M1A1 Mod Kit effort includes improvements in all areas of the M1A1 main battle tank and the Armored Vehicle Launched Bridge (AVLB). The M1A1 tank provides armor protected firepower to the USMC ground combat element. Efforts under the mod line pertaining to the M1A1 include improvements such as lethality systems to increase armament accuracy, increase the crew's situational awareness through sensor enhancements and intra-vehicular data sharing, providing for off-board targeting improvement, and environmental testing of components. The AVLB provides the Marine Corps only armor-protected assault gap crossing capability. Continued funding is required to address obsolescence and address operational deficiencies to adapt the tank and AVLB to a changing operational environment and support user-defined product improvements. These improvements directly address Marine Corps Lessons Learned, after action reports, and will ensure maximum survivability, sustainability, and readiness. Funds decreased from FY15 to FY16 to support the original acquisition strategy to defer all new modernization and obsolescence mitigation efforts until after completion of current development projects.

Route Reconnaissance and Clearance (R2C) is an incremental development project to enhance the capabilities of the R2C systems, a family of systems fielded in support of Operation Iraqi Freedom (OIF) via the Urgent Needs Statement (UNS) process. This research and development effort will integrate future vehicles, robots, and associated equipment to provide standoff detection, marking, and neutralization of Explosive Hazards such as mines and Improvised Explosive Devices (IEDs). Enhancements for R2C will provide capabilities not found in the current inventory to defeat explosive hazards and will protect Marines and equipment while conducting route and area clearance operations. The integration of the next generation of armored security and support vehicles, Vehicle Mounted Mine Detectors (VMMDs), specialized robots, and a new suite of detection, marking, and neutralization systems will enable maneuver commanders to make timely and informed decisions in avoiding or neutralizing explosive hazards that impede their missions. Multiple detection and marking capabilities will detect a broader spectrum of explosive hazards and achieve higher overall effectiveness rates, while standoff and remote-controlled detection, marking, and neutralization capabilities will enhance force protection and system survivability. Operational speeds and rates will increase, which will better support the maneuver force operational tempo. This program does not have funding beyond FY2014.

The Engineer Mods and Tool Kits line funds modifications and initiatives which are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, product quality deficiencies and other issues that affect vehicle reliability, availability and readiness. This approach ensures proper vehicle sustainment and life cycle management in response to evolving needs of the Marine Corps fleet. Operational needs to provide personnel survivability on engineer equipment is essential to current and future operations. Research and development funding develops and integrates new lighter, compact armor technology and supports ballistic testing for applications to existing and future acquisitions.

Corrosion Prevention and Control (CPAC): The useful life of Marine Corps assets will be extended through a comprehensive CPAC RDT&E program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition. The CPAC RDT&E Program works to standardize

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015					
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2316 / Combat Service Support Eng Equip				
and substantially improve strategies, objectives and processes to prevent, detect, and treat corrosion and its effects on Marine Corps ground vehicles and weapons systems. This mission responds to the Congressional directives and DoD and SECNAV instruction to reduce the negative operational effects and associated total ownership cost of Marine Corps ground vehicles and weapons systems.								
The Mine Resistant Ambush Protected (MRAP) Family of Vehicles (FoV) provides tactical mobility for Warfighters with multi-mission vehicles designed to support urgent operational needs and protect personnel from the effects of improvised explosive devices (IEDs), underbody mines, and small arms fire threats. Five vehicle categories (CATs) have been tested, procured, fielded and sustained: Category I - Urban combat operations, ambulance. Category II - Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III - Mine/IED clearance ops, explosive ordnance disposal. MRAP All Terrain Vehicle (M-ATV) - Combat operations (ops) in rural, mountainous, urban terrain. Other Protected Vehicles- Specialty mission or unique configuration. Provides the same threshold ballistic, mine and IED protection as other MRAP vehicles. Includes the MRAP Recovery Vehicle (MRV) variant. Operational needs to provide personnel survivability is essential to current and future operations. Research and development funding develops and integrates new armor technology and supports ballistic testing. Decrease in funding from FY14 to FY15 reflects the adjustment of priorities for research and development to integrate and test new armor technology.								
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Engineer Mods and Tool Kits Articles: FY 2014 Accomplishments: Continued Ballistic and Add-on-Armor applications for Extended Boom Forklift in support of the Engineer Family of Systems. FY 2015 Plans: Initiate support work for Matting applications in support of the Engineer Family of Systems. FY 2016 Base Plans: Continue support work for Matting applications in support of the Engineer Family of Systems FY 2016 OCO Plans: N/A				0.344	0.254	0.634	-	0.634
				-	-	-	-	-
Title: M1A1 Modifications Articles: FY 2014 Accomplishments: Continued to identify and develop upgrades to the M1A1 turret to include obsolescence mitigation, lethality, and survivability enhancement and evaluate broader platform modernization needs. Specifically, the preliminary research and development for the Abrams Integrated Target and Display System (AIDATS) upgrade commenced. This upgrade allows the tank commander to accurately identify and engage targets under all				3.166	3.911	1.084	-	1.084
				-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2316 / Combat Service Support Eng Equip		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
visibility conditions at ranges approaching the full capability of the tank commander's weapon system; thereby, reducing the risk of fratricide and collateral damage. Additionally, the Slew-to-Cue upgrade that will allow the tank commander to automatically traverse the main gun to the same azimuth and elevation as the Stabilized Comander's Weapons Station (SCWS) sight with a single push of a button was continued and the Forward Observer/Forward Air Controller Modificaiton for satellite communication on the move began. FY 2015 Plans: Continue to identify and develop upgrades to the M1A1 turret to include obsolescence mitigation, lethality, and survivability enhancement and evaluate broader platform modernization needs. FY 2016 Base Plans: Complete the research and development effort for AIDATS and begin other development efforts such as the Radio Communication Integration upgrade. FY 2016 OCO Plans: N/A						
Title: Route Reconnaissance and Clearance (R2C): Articles:		2.544 -	- -	- -	- -	- -
FY 2014 Accomplishments: Completed development and testing of the Unmanned Launch Vehicle (ULV) and Electronically Triggered Explosive Obstacle Neutralization (ETEON) integrations. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: Mine Resistant Ambush Protected Family of Vehicles Articles:		2.200 -	- -	0.126 -	- -	0.126 -
FY 2014 Accomplishments: -Initiated ballistic testing and engineering support efforts on Cougar Egress and Seat Solution upgrades in support of Urgent Universal Needs Statement/Joint Urgent Operational Needs Statement (UUNS/JUONS).						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2316 / Combat Service Support Eng Equip		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiated other research and development efforts associated with Engineering Change Proposals (ECP) such as survivability and mobility upgrades. FY 2015 Plans: N/A FY 2016 Base Plans: Continue research and development efforts associated with Engineering Change Proposals (ECP) such as survivability and mobility upgrades. FY 2016 OCO Plans: N/A						
Title: Corrosion Prevention and Control (CPAC) Articles:		1.963 -	3.106 -	2.811 -	- -	2.811 -
FY 2014 Accomplishments: Continued to identify new corrosion control products, materials, processes and procedures and continued to impact Marine Corps corrosion control processes through Science and Technology initiatives in some of the following areas: Thermally Sprayed Metal Coatings (TSMC) for Corrosion Protection of Areas Subject to Wear, Compatibility of Chemical Agent Resistant Coating (CARC) Systems During Re-Paint, Chip Resistant, Flexible Nonslip Coatings and Corrosion Resistant Insulating Foams. Along with stewardship of the Corrosion Products, Processes and Materials project for vendor submissions to the Marine Corps and product qualification for chip and abrasion resistant coatings. FY 2015 Plans: Continue and increase the identification of new corrosion control products, materials, processes and procedures and continues to impact Marine Corps corrosion control processes through Science and Technology initiatives in some of the following areas: Thermally Sprayed Metal Coatings (TSMC) for Corrosion Protection of Areas Subject to Wear, Compatibility of Chemical Agent Resistant Coating (CARC) Systems During Re-Paint, Chip Resistant, Flexible Nonslip Coatings and Corrosion Resistant Insulating Foams. Along with stewardship of the Corrosion Products, Processes and Materials project for vendor submissions to the Marine Corps and product qualification for chip and abrasion resistant coatings. FY 2016 Base Plans: Continue and increase the identification of new corrosion control products, materials, processes and procedures that impact Marine Corps corrosion control processes through Science and Technology initiatives in some of the						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015			
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2316 / Combat Service Support Eng Equip				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
following areas: Thermally Sprayed Metal Coatings (TSMC) for Corrosion Protection of Areas Subject to Wear, Compatibility of Chemical Agent Resistant Coating (CARC) Systems During Re-Paint, Chip Resistant, Flexible Nonslip Coatings and Corrosion Resistant Insulating Foams. Along with stewardship of the Corrosion Products, Processes and Materials project for vendor submissions to the Marine Corps and product qualification for chip and abrasion resistant coatings and other Corrosion Prevention Compounds that retard/arrest corrosion.												
FY 2016 OCO Plans: N/A												
Accomplishments/Planned Programs Subtotals								10.217	7.271	4.655	-	4.655
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• PMC/6520-01: EOD Systems - Route Reconnaissance & Clearance (R2C)	44.121	-	-	-	-	-	-	-	-	-	288.678	
• PMC/6670: Items Less than \$5M - CPAC & Eng Mods & Tool Kits	6.509	4.272	4.322	-	4.322	4.386	4.440	4.675	4.770	Continuing	Continuing	
• PMC/2061: M1A1 Modification Kit	32.121	18.406	11.827	-	11.827	12.700	14.949	15.267	15.365	Continuing	Continuing	
• PMC/6520-02: EOD Systems - MRAP	-	0.245	0.047	-	0.047	0.349	1.157	1.219	1.243	Continuing	Continuing	
• PMC/7000: M1A1 Modification Kit	-	-	2.090	-	2.090	2.514	0.364	-	-	-	4.968	
Remarks												
D. Acquisition Strategy												
(U) The M1A1 modification kits program will leverage Army initiatives to the maximum extent and incorporate modifications to adapt Army solutions to the USMC environment. The USMC will research, develop, and evaluate programs to improve the survivability and lethality of the USMC tank. These efforts include the Abrams integrated Display and Targeting System, threat detection and warning, situational awareness, survivability, and ownership cost reduction work. M1A1 Mods will exercise options on existing contracts of varying types to conduct research and analysis associated with the development of modifications and corrosion prevention to the M1A1 Tank and supporting platforms.												
(U) Route Reconnaissance and Clearance (R2C): Starting in FY10, the Marine Corps began to procure a fleet of standardized Route Reconnaissance and Clearance systems based upon the successful route clearance teams operating in Iraq using Capabilities Production Documents for current systems and leveraging contracts												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>	Project (Number/Name) 2316 / <i>Combat Service Support Eng Equip</i>
<p>already in place. Concurrently, supports a research and development effort to integrate future vehicles with enhanced mobility and survivability, a suite of improved detection and marking capabilities, and robots with greater detection, marking, and neutralization capabilities. As a result of adjustments to Marine Corps fiscal priorities the R2C program has been terminated. This program does not have funding beyond FY14.</p> <p>(U) Engineer Mods and Tool Kits: This is a roll-up line of various engineering efforts, modifications and other related items less than \$5 Million each. This program provides for significant improvements to various pieces of engineering equipment by enhancing their capabilities and improving readiness.</p> <p>(U) Corrosion Prevention and Control (CPAC) Program: The Program will execute the RDT&E Program through direct allocation of funding to the Naval Surface Warfare Center - Carderock Division Corrosion Research and Engineering Branch for a comprehensive program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition.</p> <p>(U) Mine Resistant Ambush Protected (MRAP): The Program will execute RDT&E funds in support of research and development efforts associated with Engineering Change Proposals (ECP) for survivability and mobility upgrades such as the Cougar Egress and Seat Survivability testing.</p> <p><u>E. Performance Metrics</u> N/A</p>		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2316 / Combat Service Support Eng Equip					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
M1A1 Modifications	C/FFP	MCSC : Quantico, VA	0.000	-		2.980	Jan 2015	-		-		-	-	2.980	-
MRAP Engineering	WR	NSWC : Panama City, FL	0.898	1.314	Oct 2014	-		0.126	Dec 2015	-		0.126	Continuing	Continuing	Continuing
R2C-Increment II	WR	SPAWAR : Charleston, SC	12.297	2.544	Feb 2015	-		-		-		-	-	14.841	-
M1A1 Modifications	WR	SPAWAR : Charleston, SC	0.000	0.337	Jan 2014	-		0.213	Dec 2015	-		0.213	-	0.550	-
M1A1 Modifications	MIPR	FORT BELVOIR : Ft Belvoir, VA	0.559	2.295	Jan 2014	-		-		-		-	-	2.854	-
M1A1 Modifications	MIPR	TACOM : Warren, MI	3.091	0.086	Nov 2014	0.450	Mar 2015	-		-		-	-	3.627	-
M1A1 Modifications	MIPR	ABERDEEN PROVING GROUND : Aberdeen, MD	2.610	0.378	Dec 2013	-		0.250	Dec 2015	-		0.250	-	3.238	-
M1A1 Modifications	MIPR	BENET LABS : Watervliet, NY	0.847	0.070	Nov 2013	-		-		-		-	-	0.917	-
M1A1 Modifications	MIPR	Picatinny Arsenal : Picatinny, NJ	1.174	-		-		0.383	Dec 2015	-		0.383	-	1.557	-
Prior Year Cumulative. Funding	Various	VARIOUS : VARIOUS	22.418	-		-		-		-		-	-	22.418	-
M1A1 Modifications	MIPR	NVL : Fort Belvoir, VA	0.000	-		0.481	Jan 2015	0.238	Jan 2016	-		0.238	-	0.719	-
Subtotal			43.894	7.024		3.911		1.210		-		1.210	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : various	0.300	-		-		-		-		-	-	0.300	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>						Project (Number/Name) 2316 / <i>Combat Service Support Eng Equip</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CPAC	C/FFP	NSWC : Bethesda, MD	0.000	-		1.303	Dec 2014	1.155	Dec 2015	-		1.155	-	2.458	-
Subtotal			0.300	-		1.303		1.155		-		1.155	-	2.758	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MRAP FoV Ballistic Evaluations	MIPR	ATC : Aberdeen, MD	1.600	0.886	Jun 2014	-		-		-		-	-	2.486	-
Prior Year Cumulative Funding	Various	Various : Various	1.500	-		-		-		-		-	-	1.500	-
Engineer Modification Kits	MIPR	Aberdeen Proving Grounds : Aberdeen MD	1.085	0.344	Dec 2013	0.254	Dec 2014	0.634	Dec 2015	-		0.634	Continuing	Continuing	Continuing
CPAC	WR	NSWC : Bethesda, MD	6.589	1.963	Dec 2013	1.303	Nov 2014	1.156	Dec 2015	-		1.156	-	11.011	-
CPAC	WR	NRL : Arlington, VA	0.387	-		0.500	Dec 2014	0.500	Dec 2015	-		0.500	-	1.387	-
Subtotal			11.161	3.193		2.057		2.290		-		2.290	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			55.355	10.217		7.271		4.655		-		4.655	-	-	-
Remarks															

UNCLASSIFIED

PE 0206624M: *Marine Corps Cmbt Services Supt*
Navy

R-1 Line #199

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Page 18 of 71

Proj 2316		FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
R2C				SRR ◆			TRR ◆																						
							LUE																						
							ENFIRE ATO ▼																						
							CDR ◆	SVR ◆																					
MRAP Family of Vehicles		Upgrades & Eng Spt																											

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>	Project (Number/Name) 2316 / <i>Combat Service Support Eng Equip</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 2316</i>				
R2C: System Readiness Review	4	2014	4	2014
R2C: Technical Readiness Review	3	2015	3	2015
R2C: Limited User Evaluation	3	2015	4	2015
R2C: ENFIRE Authority to Operate	3	2015	3	2015
R2C: Critical Design Review	3	2015	3	2015
R2C: System Verification Review	4	2015	4	2015
MRAP Family of Vehicles: Survivability and Mobility Upgrade Ballistic and Engineering Support	1	2014	1	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2509 / Motor Transport Mod			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2509: Motor Transport Mod	37.066	2.776	6.978	2.064	-	2.064	1.595	1.208	1.224	1.249	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Marine Corps Tactical Motor Transport Modification project manages procurement and life cycle sustainment for more than 40,000 principle end items divided among four fleets: Light Fleet, Medium Fleet, Heavy Fleet, and Special Fleet. A sustained effort is maintained in the Marine Corps for development and testing in support of fleet Service Life Extension Program (SLEP) initiatives, vehicle quality deficiency resolutions, safety initiatives, environmental/state transportation mandated vehicle changes, and system component refresh modifications efforts. Since transportation asset operational availability declines at a steady rate over time, SLEP, fleet overhauls, and enhanced depot level modifications are essential in maintaining a viable transportation capability in the Marine Corps Operating Forces.

The Improved Recovery Vehicle (IRV) project includes improvements in all areas of the M88A2 Improved Recovery Vehicle. Continued funding is required to address obsolescence and support pre-planned product improvements. In addition, lessons learned will be implemented and used to develop safety related Engineering Change Proposals (ECPs) to correct hazards noted during the standard day to day operation of the M88A2 Improved Recovery Vehicle.

The HMMWV Sustainment Modification Initiative (SMI) program was cancelled effective FY 2016. FY 2015 funding will support engineering studies and analysis to evaluate the vehicle performance, safety and reliability. This program does not have funding beyond FY15. Future Legacy HMMWV improvements and sustainment efforts will be funded in the Motor Transport Modification project.

The Material Handling Equipment (MHE) line is a roll-up line that provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps MHE including forklifts, cranes, and container handlers. Funds will be used to explore techniques and technology to help survivability of the various platforms while also working to help sustain reliability and performance of the equipment.

The Family of Construction Equipment (FCE) line is a roll-up line that provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps construction equipment. Funds will be used for Ballistic and Add on Armor (AoA) application tests and integration into the Engineer Family of Systems construction equipment. This program does not have funding beyond FY15.

P-19 Replacement (P-19R) will replace the aging A/S32P-19A Crash Fire Rescue fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle will be outfitted with advanced fire suppression equipment and provide rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19 Replacement may also be employed to fight structure fires in support of base camps and as firefighting support to other elements of the Marine Air Ground Task Force, such as ammunition supply points, Petroleum, Oil, and Lubricant (POL) distribution points, or hazardous material storage facilities. The decrease in funding from FY15 to FY16 is due to program entering production phase.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015				
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt	Project (Number/Name) 2509 / Motor Transport Mod					
The Medium Tactical Vehicle Replacement (MTVR) Trailer program explored options for "lightening the Marine Air Ground Task Force (MAGTF)" weight and cube attributes of the medium trailer fleet and sought technologies and other current and emerging options to be employed to achieve optimum lift capability while constrained to the desired weight and cube. Transportation and expeditionary goals were considered in the research and development phase for the trailer fleet. The MTVR Trailer program is a USMC initiative to replace the current M105/MK149/M353 Trailers with a trailer capable of augmenting the MTVR's increased mobility without degrading its operational capabilities. This program will develop and field a trailer which will have greater mobility characteristics while increasing the payload up to 11,500 lbs. MTVR Trailer funding ended in FY14 and will transition to the Family of Tactical Trailers program in FY16.							
The Family of Tactical Trailers program will explore options for "lightening the Marine Air Ground Task Force (MAGTF)" weight and cube attributes of the light and medium/heavy trailer fleet. Seeking technologies and other current and emerging options that can be employed to achieve optimum lift capability while constrained to the desired weight and cube. Transportation and expeditionary goals will be considered in the research and development phase for the trailer fleet. Develop long-term modernization plans for the medium and heavy trailers within the Marine Corps to address operating safety enhancements, maintainability enhancements, and crew ergonomic improvements. The FY15 to FY16 increase is due to the inclusion of the MTVR Trailer to address safety and performance needs once fielded.							
Family of Material Handling Equipment is exploring ways to armor or design survivability for various pieces of equipment in the Material Handling Family. This program does not have funding beyond FY14.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Improved Recovery Vehicle (IRV)			0.259	0.208	0.305	-	0.305
Articles:			-	-	-	-	-
FY 2014 Accomplishments:							
Continued to develop long-term modernization plans for the M88A2 within the Marine Corps to address safety, obsolescence mitigation and mobility improvement; to include Situational Awareness, exhaust system redesign, Improved Track and Electronic Fuel Injection.							
FY 2015 Plans:							
Continue to develop long-term modernization plans for the M88A2 within the Marine Corps to address operating safety enhancements, maintainability enhancements, and crew ergonomic improvements.							
FY 2016 Base Plans:							
Initiate the development of modifications for the M88A2 and supporting equipment to increase Reliability, Availability, and Maintainability (RAM), decrease operating costs, and address obsolescence, crew ergonomics, Command and Control improvements, increase towing capacity to address supported platform weight growth.							
FY 2016 OCO Plans:							

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2509 / Motor Transport Mod		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A						
Title: High Mobility Multipurpose Wheeled Vehicle ECV (HMMWV-ECV) Articles:		0.503 -	5.355 -	- -	- -	- -
FY 2014 Accomplishments: Completed the analysis and review of the final Concept test reports from NATC.						
FY 2015 Plans: Continue engineering studies and analysis to evaluate the vehicle performance, safety and reliability. Efforts will be focused on developing improvements to vehicle performance, safety and reliability.						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: P-19 Replacement Articles:		1.007 -	1.008 -	0.172 -	- -	0.172 -
FY 2014 Accomplishments: Completed Milestone B and awarded prime contract. Funded prototype development, performance & reliability testing, developed engineering data packages, and program management activities in support of the P-19R award. P-19R provides rescue and firefighting capabilities to permanent and expeditionary airfields throughout the Marine Corps and allows the MAGTF the capability to defend itself against aircraft fires caused by crashes or other causes.						
FY 2015 Plans: Continue testing of the P-19R in support of LRIP and Full Rate Production (FRP).						
FY 2016 Base Plans: Continue testing of the P-19R in support of Full Rate Production (FRP).						
FY 2016 OCO Plans: N/A						
Title: Motor Transport Modification (MTM) Articles:		0.597 -	0.108 -	0.854 -	- -	0.854 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2509 / Motor Transport Mod		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Completed evaluation, testing, and integration of system modifications identified for application on Motor Transportation light, medium, and heavy tactical assets as well as enhancements to improve vehicle performance including testing in support of the Internally Transportable Vehicle (ITV). -Completed development and procurement of the MK1077 Flatrack and integrated the PLS-T for use with the Logistics Vehicle System Replacement (LVSR).						
FY 2015 Plans: Continue to evaluate, test, and integrate system modifications to improve vehicle performance and correct deficiencies identified for application on Motor Transportation light, medium, and heavy tactical assets including testing in support of the Internally Transportable Vehicle (ITV).						
FY 2016 Base Plans: Continue to evaluate, test, and integrate system modifications to improve vehicle performance and correct deficiencies identified for application on Motor Transportation light, medium, and heavy tactical assets.						
FY 2016 OCO Plans: N/A						
Title: MTRV Trailers <div>Articles:</div>		0.086 -	- -	- -	- -	- -
FY 2014 Accomplishments: Completed testing of the modular trailer.						
FY 2015 Plans: N/A						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: Family of Tactical Trailers <div>Articles:</div>		0.167 -	0.099 -	0.733 -	- -	0.733 -
FY 2014 Accomplishments:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2509 / Motor Transport Mod		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Completed safety testing to maintain reliability and effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet and Heavy Tactical Trailers (HTT) designed for the Logistics Vehicle System (LVS)/Logistical Vehicle System Replacement (LVSR). FY 2015 Plans: Continue reliability testing to ensure effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet and also for the Heavy Tactical Trailers (HTT) designed for the Logistics Vehicle System (LVS)/Logistical Vehicle System Replacement (LVSR), enabling the fleet to maintain mobility requirements. FY 2016 Base Plans: Continue testing to ensure effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet, Medium Tactical Vehicle Replacement (MTVR) Trailer with the MTVR, and also for the Heavy Tactical Trailers (HTT) designed for the Logistics Vehicle System (LVS)/Logistical Vehicle System Replacement (LVSR), enabling the fleet to maintain mobility requirements. The FY15 to FY16 increase is due to the inclusion of the MTVR Trailer to address safety and performance needs once fielded. FY 2016 OCO Plans: N/A						
Title: Family of Material Handling Equipment Articles:		0.157 -	- -	- -	- -	- -
FY 2014 Accomplishments: Completed exploring techniques and technology for survivability on various platforms and worked to help sustain reliability and performance of the equipment. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: Family of Construction Equipment Articles:		- -	0.200 -	- -	- -	- -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015				
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2509 / Motor Transport Mod					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: N/A													
FY 2015 Plans: Initiate exploration of techniques and technology for crew survivability on various platforms while also working to help sustain reliability and performance of the equipment.													
FY 2016 Base Plans: N/A													
FY 2016 OCO Plans: N/A													
Accomplishments/Planned Programs Subtotals									2.776	6.978	2.064	-	2.064
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost		
• PMC/5230: Motor T Mod	2.856	2.964	1.108	-	1.108	4.344	4.023	3.325	3.392	Continuing	Continuing		
• PMC/5045: HMMWV	0.979	57.255	-	-	-	-	-	-	-	-	539.382		
• PMC/5097-01: Family of Tactical Trailers	3.962	0.175	3.157	-	3.157	3.017	1.950	3.181	3.247	Continuing	Continuing		
• PMC/2061: IRV	2.193	5.593	2.640	-	2.640	2.700	2.749	2.801	2.857	Continuing	Continuing		
• PMC/4630: IRV	0.132	0.158	0.162	-	0.162	0.165	0.168	0.171	0.174	Continuing	Continuing		
• PMC/5097-02: Flatrack Refueler Capability (FRC)	8.883	-	-	-	-	-	-	-	-	-	50.619		
• PMC/5097-03: MTVR Trailers	-	10.004	-	-	-	-	-	-	-	-	78.711		
• PMC/5006: P19R	16.771	11.035	18.946	-	18.946	69.541	58.459	0.330	0.357	Continuing	Continuing		
• PMC/6462: Family of Material Handling Equipment	36.227	12.037	-	-	-	8.406	11.587	8.855	9.090	Continuing	Continuing		
• PMC/6544: Family of Construction Equipment	36.221	15.669	6.545	-	6.545	7.169	9.217	12.999	13.360	Continuing	Continuing		
• PMC/7000: Family of Material Handling Equipment	-	0.070	0.050	-	0.050	0.051	0.052	0.053	0.054	Continuing	Continuing		

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2509 / Motor Transport Mod			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Remarks											
D. Acquisition Strategy											
<p>The Improved Recovery Vehicle (IRV) program leverages Army developmental projects to create a system that more readily meets Marine Corps Heavy Recovery Vehicle requirements. Improvements include Engineering Change Proposals addressing safety, reliability, and technology upgrades.</p> <p>The HMMWV Sustainment Modification Initiative (SMI) program was cancelled effective FY 2016. FY 2015 funding will support engineering studies and analysis to evaluate the vehicle performance, safety and reliability. Efforts will be focused on developing improvements to vehicle performance, safety and reliability.</p> <p>The P-19 Replacement leverages COTS and NDI components in an effort to minimize costs, test requirements, and reduce development time. P-19R will supplant the aging A/S32P-19A fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle will be outfitted with advanced fire suppression equipment and provide rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19 Replacement may also be employed to fight structure fires in support of base camps and as firefighting support to other elements of the MAGTF, such as ammunition supply points, Petroleum, Oil, and Lubricants (POL) distribution points, or hazardous material storage facilities.</p> <p>Motor Transport Modification funding will focus on streamlined acquisitions of Commercial-Off-The-Shelf/Non-Developmental Items (COTS/NDI) that can be identified, integrated, and tested in a short amount of time. Successful modifications and tests are intended for follow-on procurement and incorporation into existing system component upgrades, SLEPs, or rapid COTS/NDI fielding for the Fleet Marine Forces (FMF).</p> <p>The Family of Material Handling Equipment acquisition strategy will use RDT&E funding to explore current and new armor options that can be used to achieve optimum crew survivability performance.</p> <p>The MTRV Trailer program's original acquisition strategy consisted of procuring three variants of trailers that would have greater mobility characteristics, while maximizing the commonality of parts, across the three trailer platform. FY05 RDT&E funds were used to procure six prototypes trailers (two of each variants) developed by Choctaw Manufacturing Developing Contractors (CMDC). Prior to a fielding decision, the original MTRV Trailer program was halted due to concerns the trailers did not meet the Commandant of the Marine Corps goal to lighten the MAGTF. As a result, the MTRV Trailer program was restructured for re-design of the cargo trailer and to delay procurement of the Water and General Purpose trailers. On 29 November 2012, a Combat Development & Integration (CD&I) letter directed that the trailer requirement would now be constructed as a modular trailer capable of hauling the water Six Container and all expeditionary power units, to include the 100Kw generator. The new modular design replaces the MK149, M353, and M105 trailer and will be designated as the MTRV Modular Trailer, MK593.</p> <p>The Family of Construction Equipment acquisition strategy will use RDT&E funding to explore current and new armor options that can be used to achieve optimum crew survivability performance.</p>											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt	Project (Number/Name) 2509 / Motor Transport Mod
<p>The Family of Tactical Trailer (FTT) acquisition strategy will use RDT&E funding to explore current and new technological options that can be used to achieve optimum lift within the desired weight and cube constraints in support of the "Lightening the MAGTF" initiative, as well as sustaining and/or improving capabilities. Transportation and expeditionary goals will be considered in the research and development for the light and medium/heavy trailer fleet.</p> <p>E. Performance Metrics N/A</p>		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2509 / Motor Transport Mod					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Improved Recovery Vehicle	MIPR	TACOM : WARREN, MI	1.354	0.159	Mar 2014	0.208	Feb 2015	0.305	Apr 2016	-		0.305	Continuing	Continuing	Continuing
Improved Recovery Vehicle	WR	SPAWAR : Charleston, SC	0.000	0.100	Sep 2014	-		-		-		-	-	0.100	-
HMMWV Engineering Studies and Analysis	Various	Various : Various	0.000	-		5.073	Jun 2015	-		-		-	-	5.073	-
P-19 Replacement Development	C/FFP	OshKosh : Oshkosh, WI	6.616	0.841	Apr 2014	-		-		-		-	-	7.457	-
MTM (Heavy) Safety Testing	C/CPFF	OshKosh : Oshkosh, WI	0.000	-		0.054	Jan 2015	-		-		-	-	0.054	-
MTM (Heavy) Trailer Modification	Various	TBD : TBD	0.000	0.351	Sep 2014	-		-		-		-	-	0.351	-
MTM (Light) M&S Tool	MIPR	NSWC IH : Indian Head, MD	0.000	0.019	Jun 2014	-		-		-		-	-	0.019	-
FTT (Light) Reliability Testing	Various	TBD : TBD	0.000	0.083	Nov 2014	0.049	Jun 2015	-		-		-	-	0.132	-
FTT (Medium) ECP Development	C/CPFF	TBD : TBD	0.000	-		-		0.185	Mar 2016	-		0.185	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	20.117	-		-		-		-		-	-	20.117	19.769
Subtotal			28.087	1.553		5.384		0.490		-		0.490	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
P19 Developmental Testing	C/BA	NATC : Carson City, NV	0.000	-		0.504	Jun 2015	-		-		-	-	0.504	-
P19 ATC Reliability Testing	MIPR	Aberdeen Testing Center : Aderdeen, MD	1.200	0.166	Sep 2014	0.504	Jun 2015	0.172	Jun 2016	-		0.172	Continuing	Continuing	Continuing
MTM (Light) Safety Testing	MIPR	Various : Various	0.000	-		0.054	Jun 2015	0.427	Feb 2016	-		0.427	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2509 / Motor Transport Mod					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MTM (Light) Engineering Analysis Suppt	MIPR	DTIC : Ft. Belvoir, VA	0.000	0.227	Jun 2014	-		-		-		-	-	0.227	-
MTM (Heavy) Testing	TBD	Various : Various	0.000	-		-		0.427	Apr 2016	-		0.427	Continuing	Continuing	Continuing
MTVR Trailer Testing	SS/CPFF	NATC : Carson City, NV	1.374	0.086	Apr 2014	-		-		-		-	-	1.460	-
FTT (Heavy) Reliability Testing	MIPR	Aberdeen Testing Center : Aberdeen, MD	0.000	0.084	Mar 2015	0.050	Mar 2015	0.370	Mar 2016	-		0.370	Continuing	Continuing	Continuing
FTT (Medium) Testing	SS/CPFF	NATC : Carson City, NV	0.000	-		-		0.178	Aug 2016	-		0.178	Continuing	Continuing	Continuing
Family of Material Handling Equipment	MIPR	Aberdeen Test Center : Aberdeen, MD	0.000	0.157	May 2014	-		-		-		-	-	0.157	-
Family of Construction Equipment	MIPR	Aberdeen Test Center : Aberdeen, MD	0.000	-		0.200	Dec 2014	-		-		-	-	0.200	-
Prior Years Cumulative Funding	Various	Various : Various	6.405	-		-		-		-		-	-	6.405	-
Subtotal			8.979	0.720		1.312		1.574		-		1.574	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMMWV Program Management	Various	Various : Various	0.000	0.503	Aug 2014	0.282	Dec 2014	-		-		-	-	0.785	-
Subtotal			0.000	0.503		0.282		-		-		-	-	0.785	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			37.066	2.776		6.978		2.064		-		2.064	-	-	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy							Date: February 2015			
Appropriation/Budget Activity 1319 / 7			R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>			Project (Number/Name) 2509 / <i>Motor Transport Mod</i>				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

UNCLASSIFIED

PE 0206624M: *Marine Corps Cmbt Services Supt*
Navy

R-1 Line #199

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>
--	--

Project (Number/Name) 2509 / Motor Transport Mod	
--	--

UNCLASSIFIED

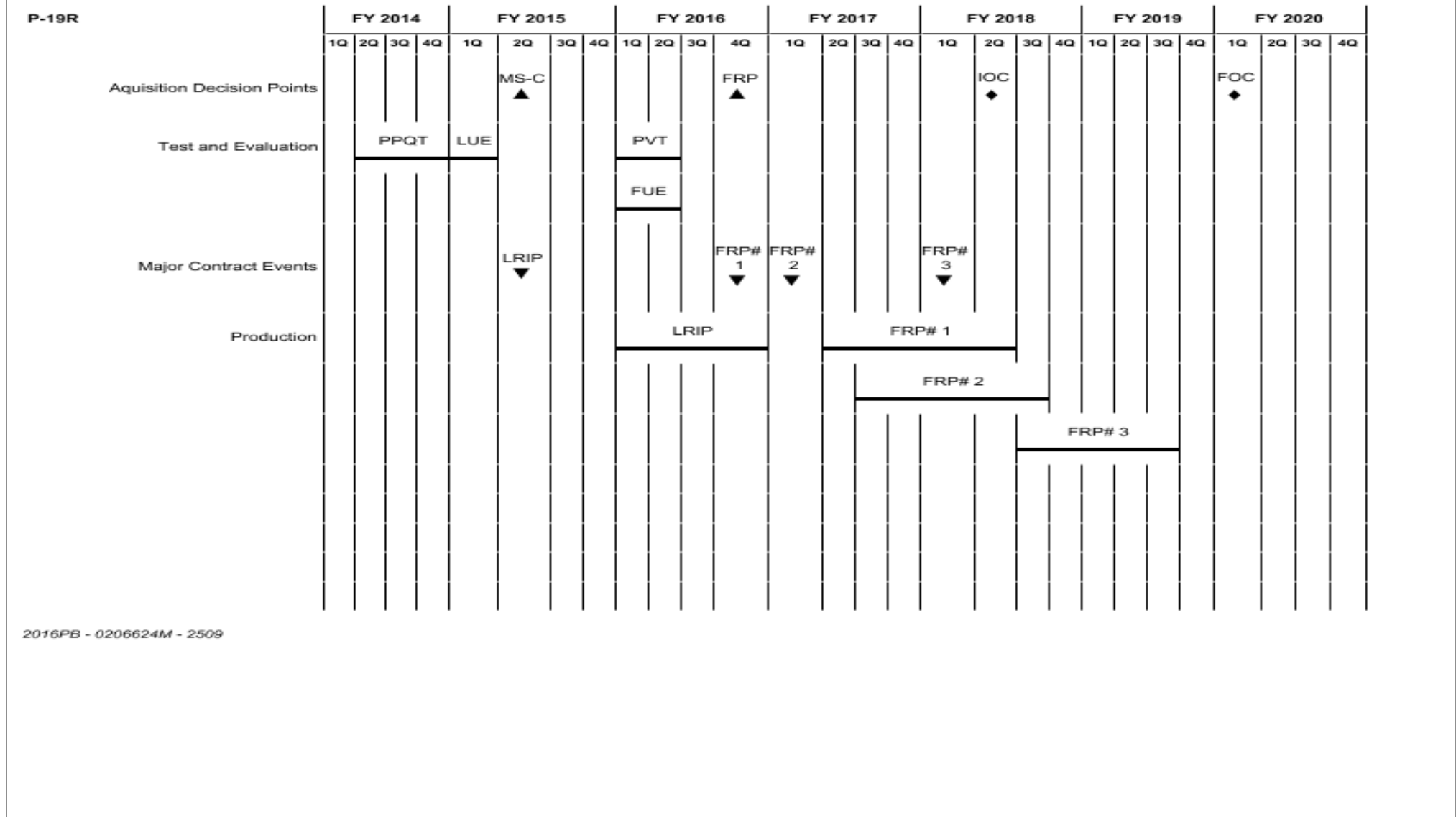
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)
2509 / Motor Transport Mod



UNCLASSIFIED

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)
2509 / Motor Transport Mod

[illegible]

2016PB - 0206624M - 2509

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 7

R-1 Program Element (Number/Name)

PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)

2509 / Motor Transport Mod

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MTVR Trailers				
Acquisition Decision Points: Initial Operating Capability	1	2015	1	2015
Acquisition Decision Points: Full Operating Capability	3	2019	3	2019
Major Contract Events: Production Contract Award	3	2014	3	2014
Major Contract Events: Delivery Order Award #1 (FY12 PMC)	3	2014	3	2014
Major Contract Events: Delivery Order Award #2 (FY13 PMC)	1	2015	1	2015
Major Contract Events: Delivery Order Award #3 (FY15 PMC)	1	2015	1	2015
Production: Production Verification Test Trailers	1	2014	1	2014
Production: Production	4	2014	4	2016
P-19R				
Aquisition Decision Points: Milestone C	2	2015	2	2015
Aquisition Decision Points: Full Rate Production Decision	4	2016	4	2016
Aquisition Decision Points: Initial Operating Capability	2	2018	2	2018
Aquisition Decision Points: Full Operating Capability	1	2020	1	2020
Test and Evaluation: Pre-Production Qualification Testing	2	2014	4	2014
Test and Evaluation: Limited User Evaluation	1	2015	1	2015
Test and Evaluation: Production Verification Testing	1	2016	2	2016
Test and Evaluation: Full User Evaluation	1	2016	2	2016
Major Contract Events: Low Rate Initial Production Award	2	2015	2	2015
Major Contract Events: Full Rate Initial Production Award #1	4	2016	4	2016
Major Contract Events: Full Rate Initial Production Award #2	1	2017	1	2017
Major Contract Events: Full Rate Initial Production Award #3	1	2018	1	2018

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2509 / Motor Transport Mod	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Production: Low Rate Initial Production		1	2016	4	2016
Production: Full Rate Initial Production #1		2	2017	2	2018
Production: Full Rate Initial Production #2		3	2017	3	2018
Production: Full Rate Initial Production #3		3	2018	3	2019
HMMWV SMI					
Major Contract Events: Engineering Studies and Analysis		3	2015	2	2016

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2510 / MAGTF CSSE & SE			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2510: MAGTF CSSE & SE	12.648	4.179	4.930	9.167	-	9.167	7.285	3.167	4.461	4.053	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Environmental Control Equipment, Mobile Power Equipment and Advanced Power Sources are a part of Expeditionary Energy Initiatives

A. Mission Description and Budget Item Justification

Environmental Control Equipment:

The Enhanced Environmental Control Unit (E2CU) program is the second generation of a family of environmental control units from 9,000 BTU to 60,000 BTU/Hr cooling output. The E2CU program will provide tactical Heating, Ventilation and Air Conditioning (HVAC) and superior reliability for all MAGTF units in all operational concepts. E2CU will replace all legacy ECUs starting in 2014 in the following sizes: 9,000 BTU/Hr; 18,000 BTU/Hr. These higher reliability and higher efficiency sets will use EPA-approved refrigerants, will be more energy efficient, be more mobile, easier to repair, and quieter than their predecessors. A significant average fuel efficiency improvement over the current ECU family has been demonstrated. With environmental control systems consuming 50-70% of tactical electric power in theater, this savings will be a significant contribution to reducing the USMC fuel demand, and lightening the Marine Air-Ground Task Force (MAGTF). The Warfighter benefit includes a decreased logistics footprint, less reliance on petroleum-derived fuels, increased local energy security, and reduced tanker losses (fewer on the road). The operational imperative to reduce fuel usage will consequently reduce refueling operations and exposing Marines to hazardous fuel convoy operations. The funding decrease from FY15 to FY16 reflects the requirements and resource realignment of all commodity areas and budget adjustments made by the Marine Corps Combat Development Command.

Mobile Power Equipment:

The Family of Mobile Electric Power Equipment consists of skid and trailer mounted tactical generators ranging from 2 to 200 kilowatts, Mobile Electric Power Distribution Systems, Load Banks, and Electrician's Tool Kits. This equipment is procured and fielded to provide electricity on the battlefield. Combat, combat support, and combat service support units all require tactical power to operate weapons systems, Command, Control, Communications, Computers and Intelligence (C4I) systems, medical and messing facilities, environmental control equipment, and water purification systems. With over 10,000 generators and using diesel engines in the Operating Forces, improving their fuel efficiency and reliability will be a significant contribution to reducing the USMC fuel demand, and lightening the MAGTF. The Warfighter benefit includes a decreased logistics footprint, less reliance on petroleum-derived fuels, increased local energy security, and reduced tanker losses (fewer on the road). The operational imperative to reduce fuel usage will consequently reduce refueling operations and exposing Marines to hazardous fuel convoy operations.

Four discrete efforts will be pursued as follows:

(1) Hybrid Generator: Funding to integrate new AMMPS 10kW Generator and energy storage devices onto a Light Tactical Trailer. Will provide capability to deliver 10kW steady state, supply up to 13kW peak demand for several hours using stored energy, and provide 3kW silent operations for several hours (battery only). Will transition into production of a unit that can be integrated with the AMMPS generator.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015				
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2510 / MAGTF CSSE & SE			
<p>(2) Next Generation Power Distribution: Intelligent power management devices that can integrate with existing Mobile Electric Power Distribution System Replacement (MEPDIS-R) Boxes and AMMPS generators. Provides capability for safe, efficient centralized power distribution from a single source to multiple loads, Automatic phase balancing of loads, and power monitoring and data collection/dissemination for remote system monitoring.</p> <p>(3) Next-Generation Floodlight System (FLS): Funding to integrate new 10kW AMMPS Generator and a new light tower (floodlight system) onto a Light Tactical Trailer. Provides tactical lighting and exportable 3-phase electrical power. Will transition into production of a unit that can be integrated with the AMMPS generator.</p> <p>(4) 1kW Diesel Generator: Integration and product qualification testing of new 1kW diesel generator for USMC-unique applications. Generator procurement will be by customers on a DoD contract.</p> <p>The funding decrease from FY15 to FY16 reflects the requirements and resource realignment of all commodity areas and budget adjustments made by the Marine Corps Combat Development Command.</p> <p>Advanced Power Sources: These R&D efforts will focus on achieving the Marine Corps goal of lightening the MAGTF and the individual Marine combat load though reduced battery weight and logistical fuel resupply needs. The Mobile Electric Hybrid Power System and Medium Hybrid Expeditionary Energy Systems (MHEES) will focus on hybrid power systems capable of improved fuel efficiency and silent operations in the 0.5-5kW power range. These systems will be smaller, lighter and more efficient systems. The conformal/CFX battery effort will focus on testing and integrating next generation batteries. The On Board Vehicle Power (OBVP) will focus on flexibility and efficiency of research and development to save fuel at idle conditions and improve vehicle energy efficiency on MTVR platforms. The funding increase from FY15 to FY16 reflects the requirements and resource realignment of all commodity areas and budget adjustments made by the Marine Corps Combat Development Command.</p>							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Environmental Control Equipment			0.917	0.435	0.202	-	0.202
Articles:			-	-	-	-	-
FY 2014 Accomplishments: -Initiated prototype testing of the Enhanced ECUs developed during FY13.							
FY 2015 Plans: -Continue prototype testing and integration of ECP (Engineering Change Proposals) for the Enhanced Environmental Control Units (E2CUs).							
FY 2016 Base Plans: -Initiate design of legacy Environmental Control Units to increase energy efficiency.							
FY 2016 OCO Plans: N/A							
Title: Mobile Power Equip/Hybrid Generator/Next Gen Power Distribution System			1.645	3.660	2.979	-	2.979
Articles:			-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2510 / MAGTF CSSE & SE		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Initiated testing and integration of the Hybrid Generator and Next Generation Power Distribution systems (AMEPDIS).						
FY 2015 Plans: -Continue testing of the Next Generation Power Distribution system (AMEPDIS). -Initiate integration and testing of AMMPS Generators with new COTS Floodlight System. -Initiate integration and testing of 1KW Generator with Ground Renewable Expeditionary Energy Systems (GREENS).						
FY 2016 Base Plans: -Initiate testing and evaluation of commercial micro-grid components and commercial Floodlight Sets.						
FY 2016 OCO Plans: N/A						
Title: Advanced Power Sources <div>Articles:</div>		1.617 -	0.835 4	5.986 12	- -	5.986 12
FY 2014 Accomplishments: -Completed testing of Medium Hybrid Expeditionary Energy Systems (MHEES) developmental articles.						
FY 2015 Plans: CONFORMAL/CFX BATTERY -Initiate test, integrate, and qualify Conformal/CFX batteries for Marine Corps use - Naval Surface Warfare Center Carderock Division, Carderock, MD will procure batteries and test. Plan for government testing in mid FY15.						
ON BOARD VEHICLE POWER (OBVP) -Continue development of NEXGEN On Board Vehicle Power, fuel efficiency study - Award two one-year RDT&E contracts to develop more fuel efficient OBVP kits. Each contractor to produce 2 each for total of 4 test articles. Plan for government testing in FY15 on MTRV platforms.						
FY 2016 Base Plans: MOBILE ELECTRIC HYBRID POWER SOURCES (MEHPS)						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015	
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>		Project (Number/Name) 2510 / <i>MAGTF CSSE & SE</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>-Initiate Engineering, Manufacturing and Development (EMD) of the Mobile Electric Hybrid Power Sources- Award two RDT&E contracts. Each contractor to produce 6 each for a total of 12 test articles. Plan for government testing in FY17 with completion in FY18.</p> <p><i>FY 2016 OCO Plans:</i> N/A</p>					
Accomplishments/Planned Programs Subtotals	4.179	4.930	9.167	-	9.167

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/6054: <i>Environmental Control Equipment</i>	11.593	0.994	0.094	-	0.094	0.698	1.003	4.287	3.397	Continuing	Continuing
• PMC/6366-1: <i>Mobile Power Equipment</i>	48.021	4.890	0.738	-	0.738	3.528	6.725	9.794	6.114	Continuing	Continuing
• PMC/6366-2: <i>Advanced Power Sources</i>	25.956	4.095	10.054	-	10.054	14.845	3.232	15.384	15.666	Continuing	Continuing

Remarks

D. Acquisition Strategy

Initial focus on development of more efficient 30,000 BTU/Hr and 60,000 BTU/Hr size model Environmental Control Units (ECUs), since they make up the greatest percentage of the inventory and are used extensively for shelter heating and cooling. Full and open competition. Three contractors to develop and deliver prototypes in two size models. Government testing to validate performance. Single contractor to produce both models using multi-year ID/IQ production contract. Low Rate Initial Production (LRIP), followed by LRIP testing, then Full Rate Production (FRP) to procure using PMC funds on annual Delivery Orders. ECUs are organically supported by Marines.

Initial focus on development of Hybrid Generator Systems using AMMPS generators began in FY13, and Power Distribution, followed by New Floodlight Set development in FY14. For each effort, strategies are very similar: Full and open competition. Three contractors to develop and deliver prototypes in two size models. Government testing to validate performance. Single contractor to produce both models using multi-year ID/IQ production contract. LRIP, followed by LRIP testing, then Full Rate Production to procure using PMC funds on annual Delivery Orders. All equipment is organically supported by Marines. The 1kW Generator effort will be to integrate and test these generators in USMC unique applications. Generators will be procured by others on a DoD contract.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>	Project (Number/Name) 2510 / <i>MAGTF CSSE & SE</i>
<p>The acquisition strategy for the Renewable Energy Program is to focus on improvements for the next generation Solar Portable Alternative Communications Energy System (SPACES), Ground Renewable Expeditionary Energy System (GREENS)/Medium Hybrid Expeditionary Energy Systems (MHEES), and Mobile Electric Hybrid Power System (MEHPS). These R&D efforts will focus on achieving the Marine Corps goal of lightening the MAGTF and the individual Marine combat load through reduced battery weight and logistical fuel resupply needs. In particular, the development will focus on making these systems smaller, lighter and more efficient. In addition, this development effort will also focus on development needed to transition the Office of Naval Research (ONR), Reliable S (SAP - Service Accessible Point) Update Protocol (RSUP), Future Naval Capability (FNC) effort.</p> <p>The acquisition strategy for the Battery Management and Sustainment System (BMAS) is to focus on the development of the next generation portable Marine Corps batteries and chargers and a Portable Lithium Battery Maintainer. These R&D efforts will focus on developing a capability which allow the Marine Corps the ability to support battery needs in all locations and environments of operation (land, sea and air). In particular, the development will focus on making the next generation Conformal/CFX battery.</p> <p>The acquisition strategy for the On Board Vehicle Power Program is to focus on the continued adaptation and development of technologies transitioned from the Office of Naval Research Future Naval Capability. Primary focus will be on adaptation for different vehicle platform models (M1151, M1165) as well as updates to system configuration due to Armor requirement changes. Further, changes in deployment methodology with command guidance to focus on flexibility and efficiency will drive research and development to save fuel at idle conditions and improve energy export efficiency.</p> <p>E. Performance Metrics</p> <p>E2CU: Energy efficiency; size; weight; EPA-approved refrigerant; affordability; organically supportable.</p> <p>MOBILE POWER: Energy efficiency; size; weight; affordability; organically supportable.</p> <p>SPACES: 50% size reduction of controller, 50% reduction in panel surface area, 50% increase in panel efficiency</p> <p>GREENS/MHEES/MEHPS): 20% reduction in weight, 50% increase in power capability, 20% reduction in volume</p> <p>BMAS: Energy efficiency; size; weight; ability to charge specified batteries</p> <p>OBVP: N/A</p>		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2510 / MAGTF CSSE & SE					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
E2CU DEVELOPMENT	C/FFP	VAR : VAR	3.002	-		-		0.202	Mar 2016	-		0.202	Continuing	Continuing	Continuing
APS OBVP MTVR DEVELOPMENT	C/IDIQ	TBD : TBD	0.000	-		0.300	Mar 2015	-		-		-	-	0.300	-
APS CONFORMAL/CFXI BATTERY DEVELOPMENT	C/IDIQ	NSWC : CARDEROCK, MD	0.000	-		0.300	Mar 2015	-		-		-	-	0.300	-
APS MEHPS EMD	C/IDIQ	TBD : TBD	0.000	-		-		5.986	Dec 2015	-		5.986	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	VAR : VAR	8.120	-		-		-		-		-	-	8.120	-
Subtotal			11.122	-		0.600		6.188		-		6.188	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AMEPDIS SUPPORT	Various	VAR : VAR	0.000	0.059	Aug 2014	0.050	Apr 2015	-		-		-	-	0.109	-
Subtotal			0.000	0.059		0.050		-		-		-	-	0.109	-
Remarks															
Travel to support testing verification for Mobile Power Distribution (AMEPDIS) in 2014-2015.															
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
E2CU TESTING	Various	ABERDEEN TEST CENTER : ABERDEEN, MD	0.000	0.917	Aug 2014	-		-		-		-	-	0.917	-
HYBRID GENERATOR/ NEXT GEN POWER DIST SYS	MIPR	ABERDEEN TEST CENTER : ABERDEEN, MD	0.000	1.586	Apr 2014	2.578	Mar 2015	-		-		-	-	4.164	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt						Project (Number/Name) 2510 / MAGTF CSSE & SE			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
APS MHEES/MEHPS-L TESTING	WR	NSWC : CARDEROCK, MD	0.000	1.617	Mar 2014	-		-		-		-	-	1.617	-
APS CONFORMAL/CFXI BATTERY TEST PLAN AND PREP	WR	NSWC : CARDEROCK, MD	0.000	-		0.100	Mar 2015	-		-		-	-	0.100	-
APS OBVP MTRV TEST PLAN AND PREP	MIPR	ABERDEEN TEST CENTER : ABERDEEN, MD	0.000	-		0.100	Mar 2015	-		-		-	-	0.100	-
Prior Year Cumulative Funding	Various	Various : Various	1.339	-		-		-		-		-	-	1.339	-
E2CU INTEGRATION TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	-		0.435	Apr 2015	-		-		-	-	0.435	-
MPE MICRO GRID TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	-		-		2.003	Feb 2016	-		2.003	Continuing	Continuing	Continuing
MPE FLS AND 1KW INTEGRATION TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	-		1.032	Apr 2015	0.976	Apr 2016	-		0.976	Continuing	Continuing	Continuing
Subtotal			1.339	4.120		4.245		2.979		-		2.979	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
APS PM support for development and test mgmt	C/FFP	MCSC : Quantico, VA	0.187	-		0.035	Mar 2015	-		-		-	-	0.222	-
Subtotal			0.187	-		0.035		-		-		-	-	0.222	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy											Date: February 2015				
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt					Project (Number/Name) 2510 / MAGTF CSSE & SE					
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			12.648	4.179		4.930		9.167		-		9.167	-	-	-

Remarks

Environmental Control Equipment, Mobile Power Equipment and Advanced Power are part of Expeditionary Energy Initiatives.

UNCLASSIFIED

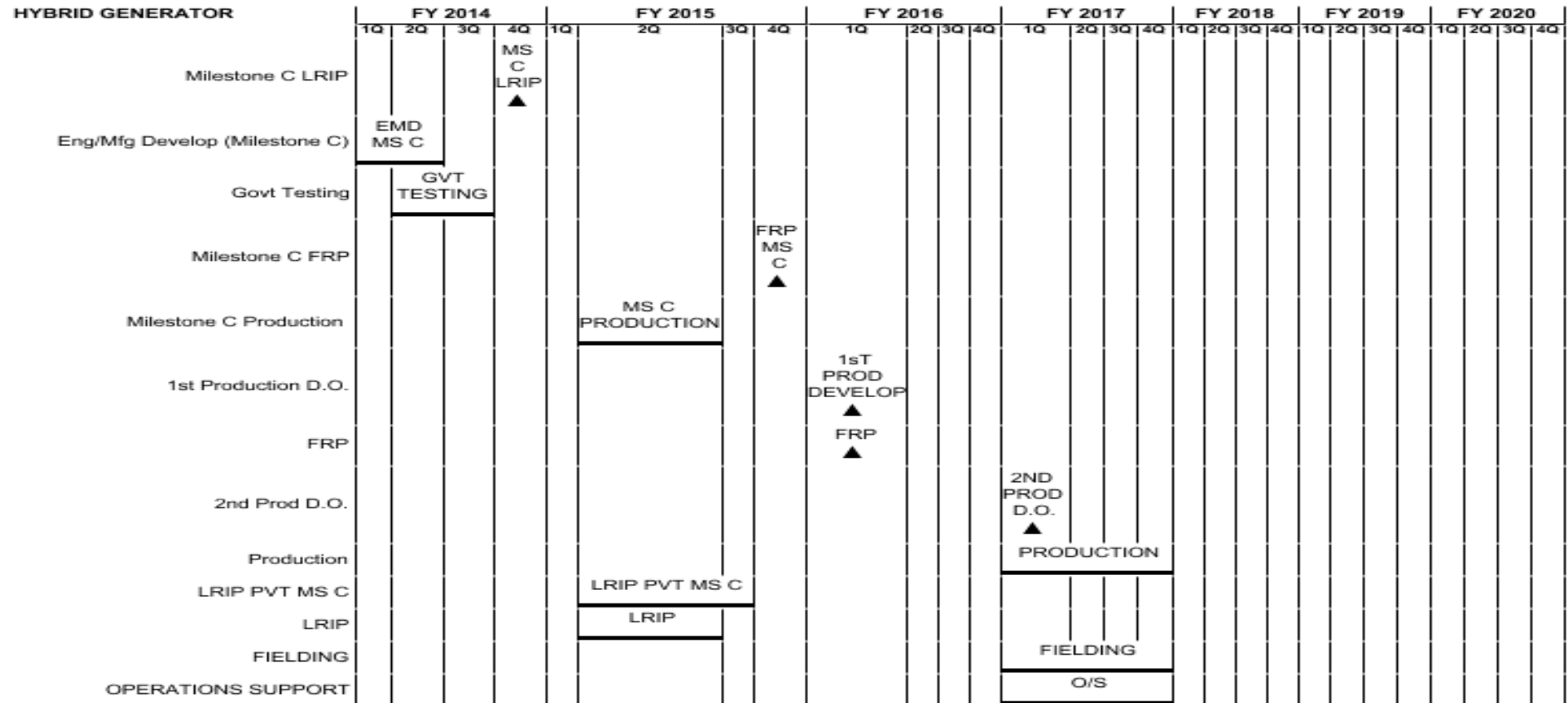
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)
2510 / MAGTF CSSE & SE



2016PB - 0206624M - 2510

UNCLASSIFIED

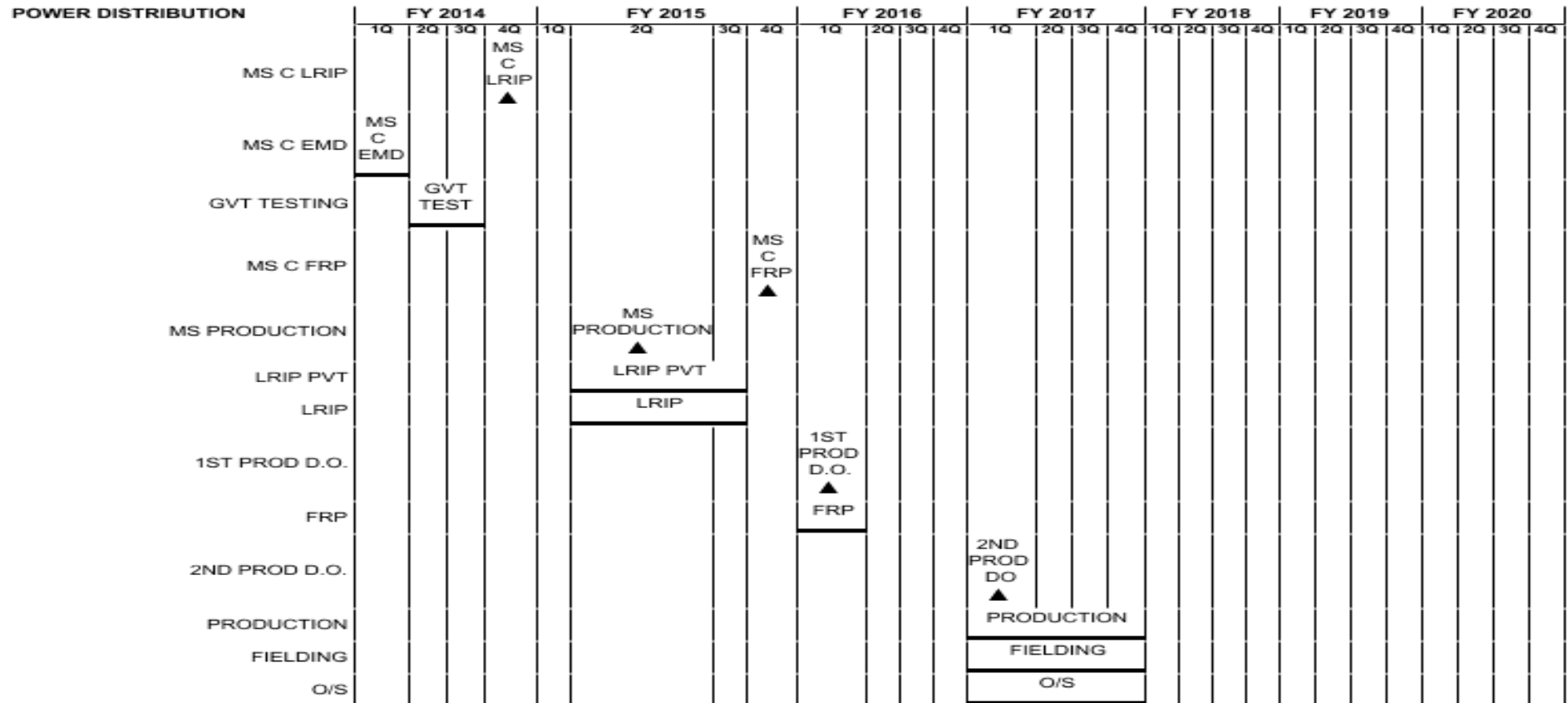
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)
2510 / MAGTF CSSE & SE



2016PB - 0206624M - 2510

UNCLASSIFIED

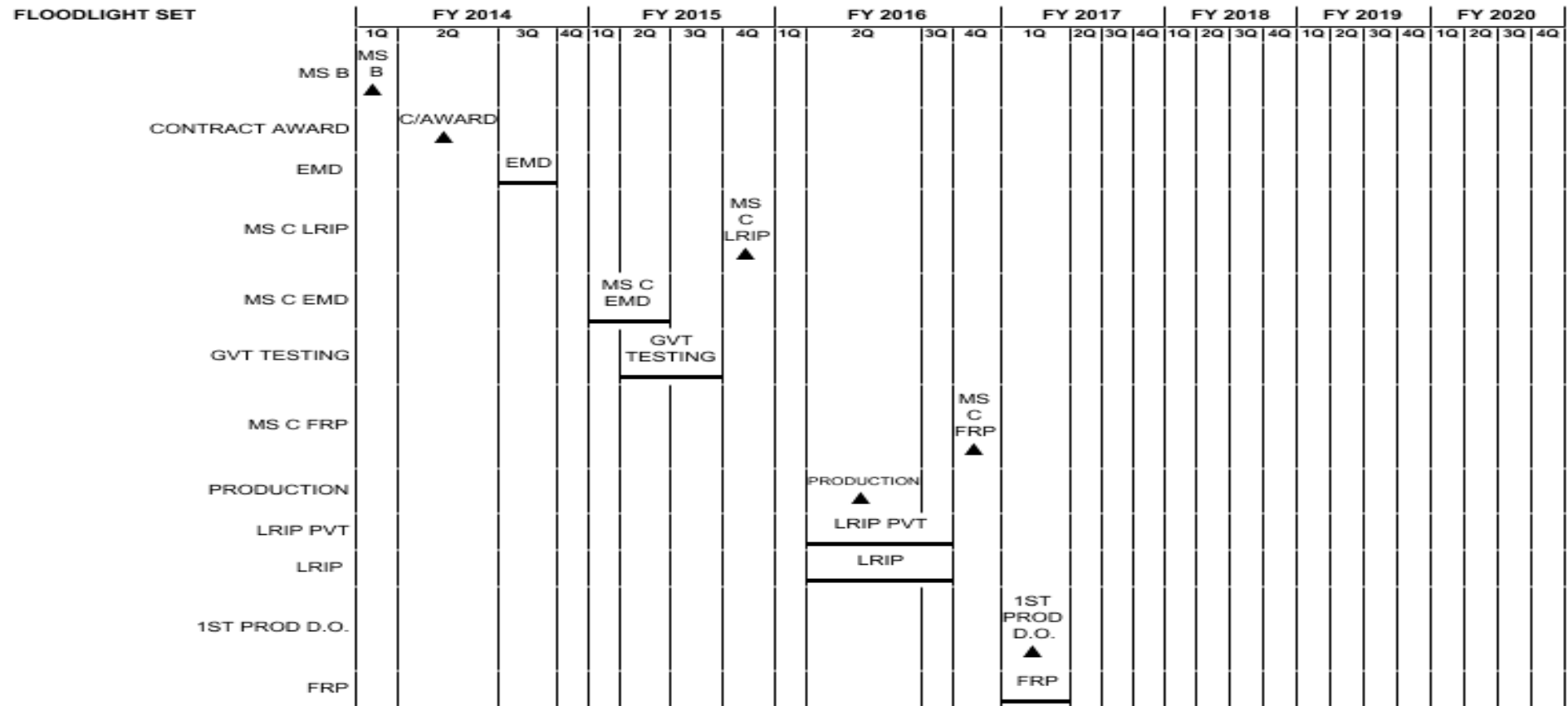
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)
2510 / MAGTF CSSE & SE



2016PB - 0206624M - 2510

UNCLASSIFIED

PE 0206624M: *Marine Corps Cmbt Services Supt*
Navy

R-1 Line #199

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name) 2510 / MAGTF CSSE & SE
--

UNCLASSIFIED

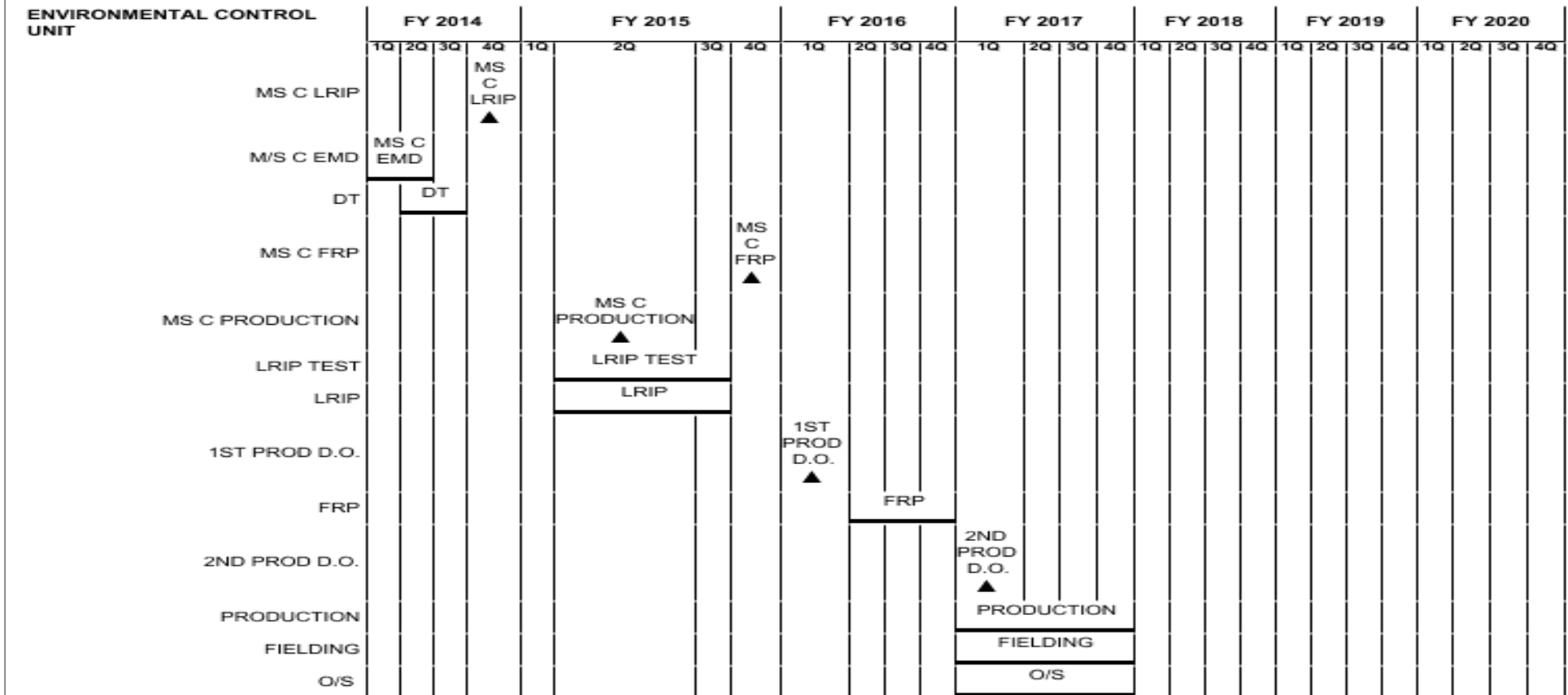
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)
2510 / MAGTF CSSE & SE



2016PB - 0206624M - 2510

UNCLASSIFIED

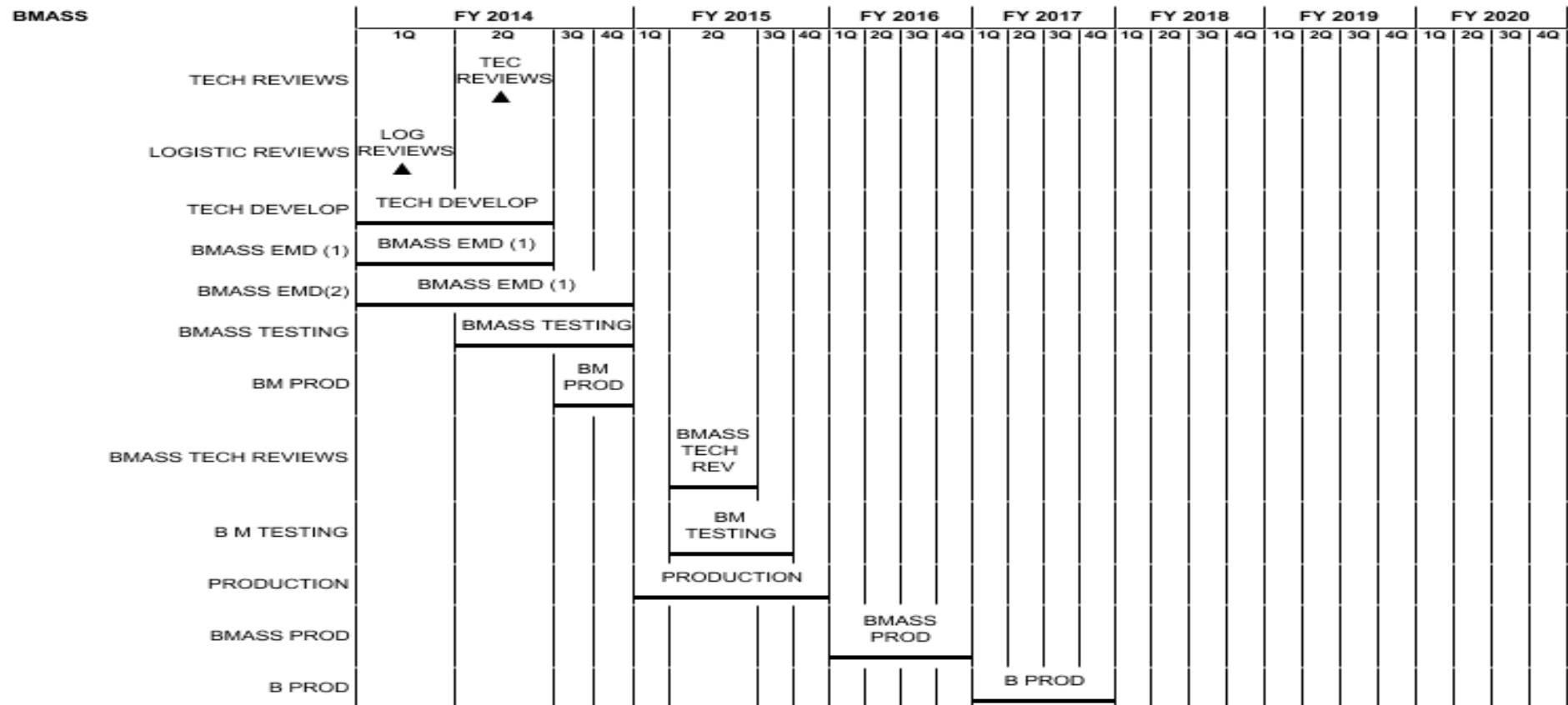
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / *Marine Corps Cmbt Services Supt*

Project (Number/Name)
2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

UNCLASSIFIED

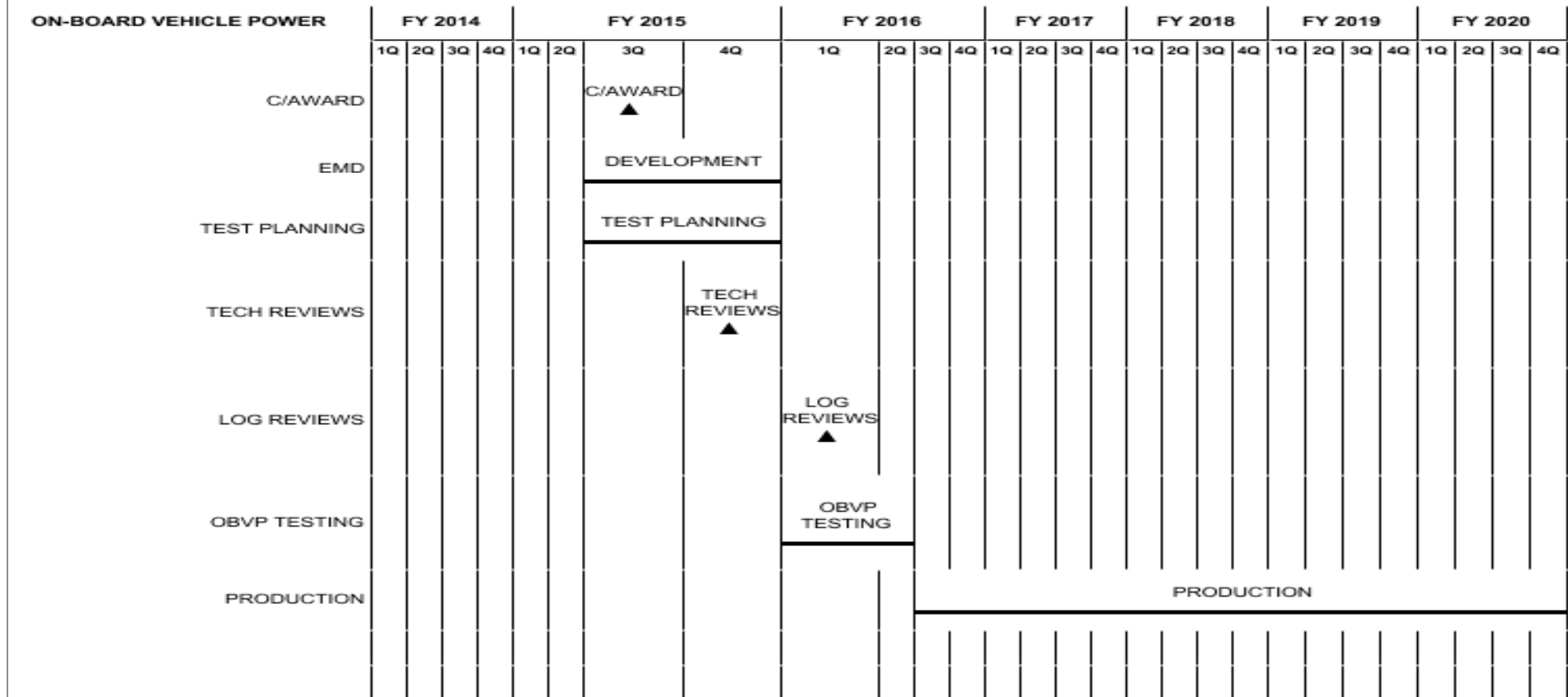
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / *Marine Corps Cmbt Services Supt*

Project (Number/Name)
2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

UNCLASSIFIED

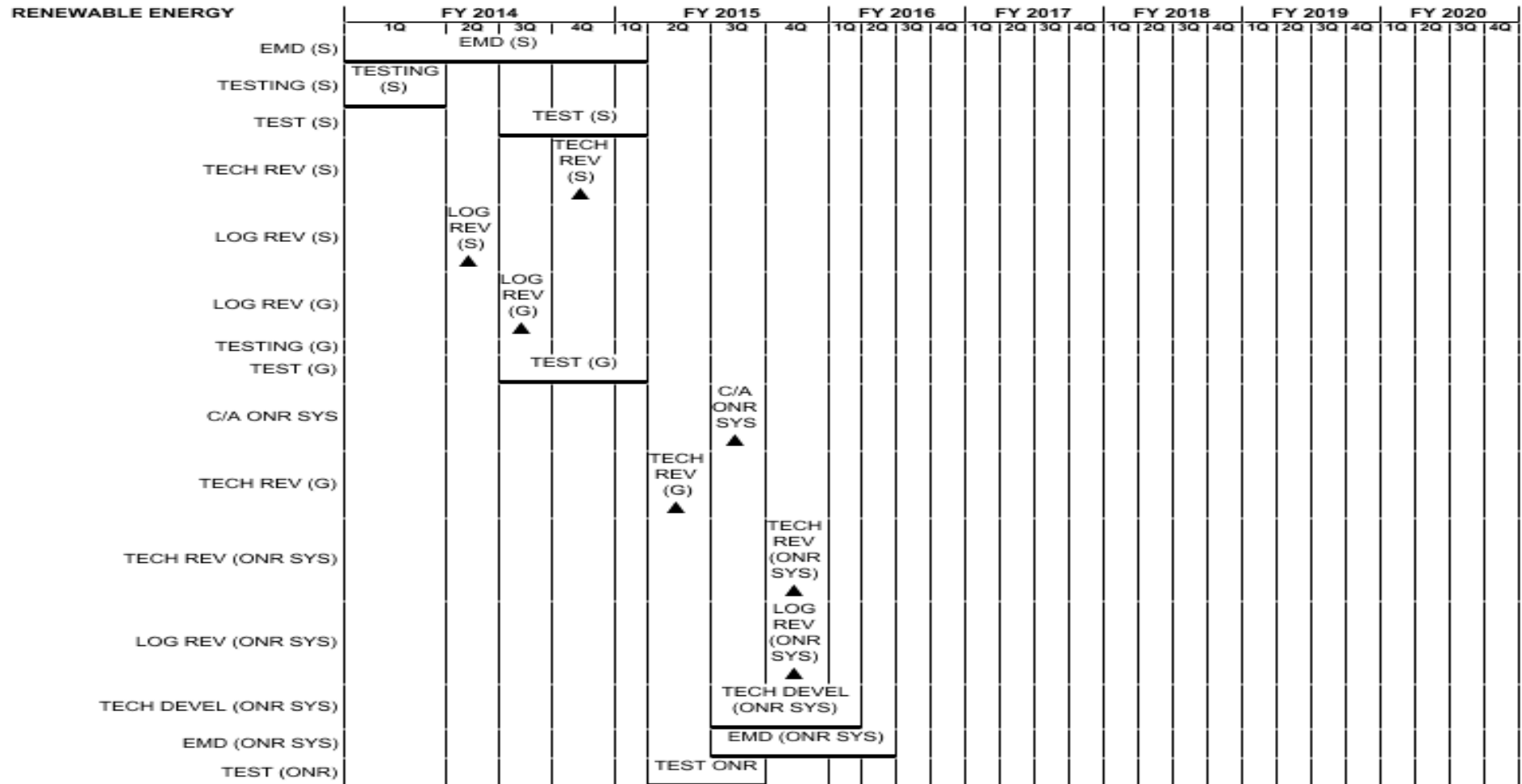
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / *Marine Corps Cmbt Services Supt*

Project (Number/Name)
2510 / *MAGTF CSSE & SE*



UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy														Date: February 2015																											
Appropriation/Budget Activity 1319 / 7														R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt														Project (Number/Name) 2510 / MAGTF CSSE & SE													
TEST (ONR SYS)														TEST ONR SYS																											
PRODUCTION (S)														PRODUCTION (S)																											
PRODUCTION (G)														PRODUCTION (G)																											
PRODUCTION (ONR SYS)														PRODUCTION (ONR SYS)																											
2016PB - 0206624M - 2510																																									

UNCLASSIFIED

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / *Marine Corps Cmbt*
Services Supt

Project (Number/Name)
2510 / MAGTF CSSE & SE

[illegible]

2016PB - 0206624M - 2510

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / *Marine Corps Cmbt Services Supt*

Project (Number/Name)
2510 / *MAGTF CSSE & SE*

MOBILE ELECTRIC HYBRID POWER SOURCES	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
C/AWARD									C/AWARD ▲																			
TECH REVIEWS																												
TESTING																												
MS C/FRP																												
PRODUCTION																												

2016PB - 0206624M - 2510

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>	Project (Number/Name) 2510 / <i>MAGTF CSSE & SE</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
HYBRID GENERATOR				
Milestone C LRIP:	4	2014	4	2014
Eng/Mfg Develop (Milestone C):	1	2014	2	2014
Govt Testing:	2	2014	3	2014
Milestone C FRP:	4	2015	4	2015
Milestone C Production:	2	2015	2	2015
1st Production D.O.:	1	2016	1	2016
FRP:	1	2016	1	2016
2nd Prod D.O.:	1	2017	1	2017
Production:	1	2017	4	2017
LRIP PVT MS C:	2	2015	3	2015
LRIP:	2	2015	2	2015
FIELDING:	1	2017	4	2017
OPERATIONS SUPPORT:	1	2017	4	2017
POWER DISTRIBUTION				
MS C LRIP:	4	2014	4	2014
MS C EMD:	1	2014	1	2014
GVT TESTING:	2	2014	3	2014
MS C FRP:	4	2015	4	2015
MS PRODUCTION:	2	2015	2	2015
LRIP PVT:	2	2015	3	2015
LRIP:	2	2015	3	2015

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2510 / MAGTF CSSE & SE	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
1ST PROD D.O.:		1	2016	1	2016
FRP:		1	2016	1	2016
2ND PROD D.O.:		1	2017	1	2017
PRODUCTION:		1	2017	4	2017
FIELDING:		1	2017	4	2017
O/S:		1	2017	4	2017
FLOODLIGHT SET					
MS B:		1	2014	1	2014
CONTRACT AWARD:		2	2014	2	2014
EMD:		3	2014	3	2014
MS C LRIP:		4	2015	4	2015
MS C EMD:		1	2015	2	2015
GVT TESTING:		2	2015	3	2015
MS C FRP:		4	2016	4	2016
PRODUCTION:		2	2016	2	2016
LRIP PVT:		2	2016	3	2016
LRIP:		2	2016	3	2016
1ST PROD D.O.:		1	2017	1	2017
FRP:		1	2017	1	2017
1KW INTEGRATION					
INTEGRATION:		2	2015	2	2015
GVT TESTING:		2	2016	3	2016
O/S:		1	2017	4	2017
ENVIRONMENTAL CONTROL UNIT					
MS C LRIP:		4	2014	4	2014

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy				Date: February 2015	
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>		Project (Number/Name) 2510 / <i>MAGTF CSSE & SE</i>	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
M/S C EMD:		1	2014	2	2014
DT:		2	2014	3	2014
MS C FRP:		4	2015	4	2015
MS C PRODUCTION:		2	2015	2	2015
LRIP TEST:		2	2015	3	2015
LRIP:		2	2015	3	2015
1ST PROD D.O.:		1	2016	1	2016
FRP:		2	2016	4	2016
2ND PROD D.O.:		1	2017	1	2017
PRODUCTION:		1	2017	4	2017
FIELDING:		1	2017	4	2017
O/S:		1	2017	4	2017
BMASS					
TECH REVIEWS:		2	2014	2	2014
LOGISTIC REVIEWS:		1	2014	1	2014
TECH DEVELOP:		1	2014	2	2014
BMASS EMD (1):		1	2014	2	2014
BMASS EMD(2):		1	2014	4	2014
BMASS TESTING:		2	2014	4	2014
BM PROD:		3	2014	4	2014
BMASS TECH REVIEWS:		2	2015	2	2015
B M TESTING:		2	2015	3	2015
PRODUCTION:		1	2015	4	2015
BMASS PROD:		1	2016	4	2016
B PROD:		1	2017	4	2017

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 7

R-1 Program Element (Number/Name)

PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)

2510 / MAGTF CSSE & SE

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ON-BOARD VEHICLE POWER				
C/AWARD:	3	2015	3	2015
EMD:	3	2015	4	2015
TEST PLANNING:	3	2015	4	2015
TECH REVIEWS:	4	2015	4	2015
LOG REVIEWS:	1	2016	1	2016
OBVP TESTING:	1	2016	2	2016
PRODUCTION:	3	2016	4	2020
RENEWABLE ENERGY				
EMD (S):	1	2014	1	2015
TESTING (S):	1	2014	1	2014
TEST (S):	3	2014	1	2015
TECH REV (S):	4	2014	4	2014
LOG REV (S):	2	2014	2	2014
LOG REV (G):	3	2014	3	2014
TEST (G):	3	2014	1	2015
C/A ONR SYS:	3	2015	3	2015
TECH REV (G):	2	2015	2	2015
TECH REV (ONR SYS):	4	2015	4	2015
LOG REV (ONR SYS):	4	2015	4	2015
TECH DEVEL (ONR SYS):	3	2015	1	2016
EMD (ONR SYS):	3	2015	2	2016
TEST (ONR):	2	2015	3	2015
TEST (ONR SYS):	3	2015	2	2016
PRODUCTION (S):	2	2015	4	2017

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 2510 / MAGTF CSSE & SE	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
PRODUCTION (G):		1	2015	4	2017
PRODUCTION (ONR SYS):		2	2016	4	2017
CONFORMAL/CFX BATTERY					
C/AWARD:		2	2015	2	2015
TECH REVIEWS:		3	2015	1	2016
TESTING:		3	2015	1	2016
PRODUCTION:		1	2016	1	2017
MOBILE ELECTRIC HYBRID POWER SOURCES					
C/AWARD:		1	2016	1	2016
TECH REVIEWS:		4	2016	4	2016
TESTING:		1	2017	2	2018
MS C/FRP:		2	2018	2	2018
PRODUCTION:		3	2018	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2929 / Testing Measuring Diag Equip & SE			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2929: Testing Measuring Diag Equip & SE	6.120	1.897	0.248	0.516	-	0.516	0.544	0.580	0.622	0.636	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Marine Corps Family of Automatic Test Systems (ATS), formerly called Third Echelon Test Sets (TETS), provides automatic test program capability for use by technicians both in garrison and the forward edge of the battlefield; specifically in the areas of interactive electronic technical manuals, condition/predictive based maintenance, and embedded sensors and prognostics.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Automatic Test Systems (ATS) Articles: FY 2014 Accomplishments: -Researched new testing techniques to prevent obsolescence of legacy systems. -Developed integration techniques to address new testing solutions into fielded automatic test systems. FY 2015 Plans: -Continue to develop advanced technology concepts for automatic test and integrate the subsystems and components into fielded automatic test solutions to support weapon systems. FY 2016 Base Plans: -Continue to develop advanced technology concepts for automatic test and integrate the subsystems and components into fielded automatic test solutions to support weapon systems. FY 2016 OCO Plans: N/A								1.897	0.248	0.516	-	0.516
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								1.897	0.248	0.516	-	0.516
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• PMC/4181-01: TETS	2.724	-	-	-	-	-	-	-	-	-	128.904	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>				Project (Number/Name) 2929 / <i>Testing Measuring Diag Equip & SE</i>			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• PMC/4181-02: <i>Automatic Test Systems (ATS)</i>	17.276	14.786	13.238	-	13.238	13.389	4.007	6.538	5.032	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Automatic Test Systems (ATS) acquisition is being done through Marine Corps Systems Command (MCSC) contracts and in-house at Marine Corps Logistics Command (MCLC), Albany, GA, and Naval Supply Systems Command (NAVSUP), San Diego, CA.											
E. Performance Metrics											
N/A											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 2929 / Testing Measuring Diag Equip & SE					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ATS Study & Hardware 5	C/FFP	NAVSUP : San Diego, CA	0.000	0.911	Sep 2014	-		-		-		-	-	0.911	-
ATS Study & Hardware 4	C/FFP	OSD : Washington, D.C.	0.000	0.500	Sep 2014	-		-		-		-	-	0.500	-
Prior Years Cumulative Funding	Various	N/A : N/A	2.716	-		-		-		-		-	-	2.716	-
ATS Technology Evaluation & Hardware	C/FFP	MCSC : Quantico, VA	0.000	0.185	Jan 2015	0.248	Mar 2015	0.318	Apr 2016	-		0.318	-	0.751	-
Subtotal			2.716	1.596		0.248		0.318		-		0.318	-	4.878	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support (ATS)	WR	MCLB : Albany, GA	3.404	0.301	Nov 2013	-		0.198	Nov 2015	-		0.198	Continuing	Continuing	Continuing
Subtotal			3.404	0.301		-		0.198		-		0.198	-	-	-
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			6.120	1.897	0.248		0.516		-		0.516	-	-	-	
Remarks															

UNCLASSIFIED

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0206624M / Marine Corps Cmbt
Services Supt

Project (Number/Name)
2929 / Testing Measuring Diag Equip & SE

[illegible]

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015	
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>		Project (Number/Name) 2929 / <i>Testing Measuring Diag Equip & SE</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 2929</i>				
Milestone B	2	2016	2	2016
Milestone C	1	2018	1	2018
Full Rate Production Decision	2	2018	2	2018
Initial Operational Capability (IOC)	4	2018	4	2018
Full Operational Capability (FOC)	3	2019	3	2019
Developmental Testing	1	2017	4	2017

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 9C90 / MTVR Mod			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9C90: MTVR Mod	40.863	2.602	1.187	4.066	-	4.066	1.251	0.775	1.118	0.145	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The MTVR Modification program line funds numerous modifications and initiatives that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, and other issues that affect vehicle reliability, availability, maintainability, readiness, as well as energy efficiency. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management, and it allows the program office the flexibility to develop and implement improvements as needed to respond to the evolving needs of the Marine Corps.												
The increase (\$2.879M) from FY15 to FY16 is due to the transition of the Office of Naval Research's Future Naval Capability to the Program Office.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development Articles: FY 2014 Accomplishments: Initiated PMO participation in the development of an Auxillary Power Unit (APU) which supports the Commandant of the Marine Corps (CMC) priorities for reducing energy costs, logistics footprint, and an improved environment. FY 2015 Plans: N/A FY 2016 Base Plans: Initiate product development in support of the Office of Naval Research (ONR) Future Naval Capability (FNC) initiative for fuel economy components on different variants of the MTVR vehicles in preparation of its transition to the program office. Also supports the development of various ECPs due to continual changes in the threat environment which requires on-going vehicle modifications. FY 2016 OCO Plans: N/A								1.298	-	1.969	-	1.969
								-	-	-	-	-
Title: Support Articles:								0.186	1.137	1.592	-	1.592
								-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt		Project (Number/Name) 9C90 / MTVR Mod	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Continued activities in support of the MTVR vehicle to include (but not limited to) ECPs, safety, & survivability upgrades in response to continual changes in the threat environment to protect the warfighter and vehicle from possible catastrophic events, and in order to meet the current and future operations of Expeditionary Force 21.					
FY 2015 Plans: -Continue activities in support of the MTVR vehicle to include (but not limited to) ECPs, safety, & survivability upgrades in response to continual changes in the threat environment to protect the warfighter and vehicle from possible catastrophic events, and in order to meet the current and future operations of Expeditionary Force 21. -Resume support of energy initiatives aligning with the Commandant of the Marine Corps (CMC) priority for reducing energy costs, logistics footprint, and an improved environment.					
FY 2016 Base Plans: -Continue activities in support of the MTVR vehicle to include (but not limited to) ECPs, safety, & survivability upgrades in response to continual changes in the threat environment to protect the warfighter and vehicle from possible catastrophic events, and in order to meet the current and future operations of Expeditionary Force 21. -Continue support of energy initiatives aligning with the Commandant of the Marine Corps (CMC) priority for reducing energy costs, logistics footprint, and an improved environment.					
FY 2016 OCO Plans: N/A					
Title: Test and Evaluation		1.118	0.050	0.505	-
Articles:		-	-	-	-
FY 2014 Accomplishments: -Continued Test & Evaluation efforts supporting ECP/safety mods of the MTVR. -Initiated Energy Initiative Test & Evaluation efforts of an Auxillary Power Unit (APU) and a D-Cycle engine which supports the CMC's priority for reducing energy costs, logistics footprint, and an improved environment. -Initiated Modeling & Simulation testing to support the MTVR.					
FY 2015 Plans: Continue Modeling & Simulation testing to support the MTVR.					
FY 2016 Base Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015							
Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>		Project (Number/Name) 9C90 / <i>MTVR Mod</i>							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total						
-Initiate Test & Evaluation efforts supporting ECP/safety mods of the MTVR. Also restarts Energy Initiative Test & Evaluation efforts which supports the CMC's priority for reducing energy costs, logistics footprint, and an improved environment. -Continue Modeling & Simulation testing to support the MTVR. <i>FY 2016 OCO Plans:</i> N/A											
Accomplishments/Planned Programs Subtotals		2.602	1.187	4.066	-						
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/5050: <i>MTVR Motor Transport Mods</i>	1.527	0.469	5.433	-	5.433	7.594	6.597	8.287	8.457	Continuing	Continuing
• PMC/5088: <i>MTVR</i>	-	0.584	-	-	-	-	-	-	-	-	476.977
Remarks											
D. Acquisition Strategy											
The strategy for the MTVR Modification initiative is to aid in the prevention of parts obsolescence, address safety concerns, and respond to emergent threats. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management, and it allows the program office the flexibility to develop and implement improvements as required to respond to evolving needs.											
E. Performance Metrics											
N/A											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 9C90 / MTVR Mod					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Energy Efficiency (APU Spares)	SS/CPFF	Marving Land Systems : Los Angeles, CA	0.000	0.186	Feb 2014	-		-		-		-	-	0.186	-
Energy Efficiency (FNC) Development	TBD	TBD : TBD	0.000	-		-		1.722	Jun 2016	-		1.722	Continuing	Continuing	Continuing
ECP Development	WR	TBD : TBD	0.000	-		-		0.247	May 2016	-		0.247	Continuing	Continuing	Continuing
Energy Efficiency Efforts	MIPR	NAMC : Warren, MI	0.000	1.112	Jan 2015	-		-		-		-	-	1.112	-
Prior Years Cumulative Funding	Various	Various : Various	18.500	-		-		-		-		-	-	18.500	-
Subtotal			18.500	1.298		-		1.969		-		1.969	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Energy Initiative	Various	Various : Various	0.300	-		0.600	May 2015	0.892	Jun 2016	-		0.892	Continuing	Continuing	Continuing
ECP Support	SS/CPFF	Oshkosh : Oshkosh, WI	4.554	-		0.262	Mar 2015	0.300	Mar 2016	-		0.300	Continuing	Continuing	Continuing
Safety Initiatives	SS/CPFF	Oshkosh : Oshkosh, WI	3.860	-		0.275	Jul 2015	0.200	Apr 2016	-		0.200	Continuing	Continuing	Continuing
Safety Initiatives	MIPR	TARDEC : Warren, MI	0.000	-		-		0.200	Jun 2016	-		0.200	-	0.200	-
Survivability Support (ECP)	MIPR	DTIC : Ft. Belvior, VA	0.000	0.186	Sep 2014	-		-		-		-	-	0.186	-
ECP Integration	SS/CPFF	Oshkosh : Oshkosh, WI	2.162	-		-		-		-		-	-	2.162	-
Subtotal			10.876	0.186		1.137		1.592		-		1.592	-	-	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt				Project (Number/Name) 9C90 / MTRV Mod					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ECP/Integration/Safety Mod Testing	MIPR	ATC : Aberdeen, MD	1.600	0.030	Jul 2014	-		-		-		-	-	1.630	-
Energy Initiative Testing	MIPR	ATC : Aberdeen, MD	0.000	0.308	Feb 2014	-		0.278	Jul 2016	-		0.278	Continuing	Continuing	Continuing
Energy Initiative (APU)	WR	NSWC : Dalghren, VA	0.000	0.231	Mar 2014	-		-		-		-	-	0.231	-
Modeling and Simulation (SIL)	Reqn	NSWC : Indian Head, MD	0.000	0.032	Jun 2014	-		-		-		-	-	0.032	-
Modeling and Simulation (SIL)	MIPR	TARDEC : Warren, MI	0.810	-		0.050	Apr 2015	0.050	Jun 2016	-		0.050	0.300	1.210	-
Safety Testing	WR	NRL : Washington, DC	0.000	0.233	Sep 2014	-		0.177	Feb 2016	-		0.177	-	0.410	-
Energy Efficient Efforts	MIPR	NAMC : Warren, MI	0.000	0.284	Jan 2015	-		-		-		-	-	0.284	-
Prior Years Cumulative Funding	Various	Various : Various	9.077	-		-		-		-		-	-	9.077	-
Subtotal			11.487	1.118		0.050		0.505		-		0.505	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			40.863	2.602		1.187		4.066		-		4.066	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy										Date: February 2015									
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / Marine Corps Cmbt Services Supt					Project (Number/Name) 9C90 / MTVR Mod									

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 9C90																												
Live Fire Test & Eval																												
Fuel Efficient Modifications																												
Safety Mod Development																												
ECP Development																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / <i>Marine Corps Cmbt Services Supt</i>	Project (Number/Name) 9C90 / <i>MTVR Mod</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 9C90</i>				
Live Fire Test & Eval	1	2014	4	2014
Fuel Efficient Modifications	1	2014	4	2020
Safety Mod Development	1	2014	4	2020
ECP Development	1	2014	4	2020