Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy											Date: February 2016	
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*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	210.309	18.184	19.955	13.194	-	13.194	15.118	16.425	13.670	13.963	Continuing	Continuing
0201: *Logistical Veh Sys Replacement (LVSR)*	36.586	0.292	0.261	0.264	-	0.264	0.235	0.208	0.212	0.216	Continuing	Continuing
2316: *Combat Service Support Eng Equip*	65.572	6.993	4.655	4.984	-	4.984	8.203	8.223	7.461	7.621	Continuing	Continuing
2509: *Motor Transport Mod*	39.842	3.735	1.318	1.578	-	1.578	1.195	1.205	1.233	1.260	Continuing	Continuing
2510: *MAGTF CSSE & SE*	16.827	4.560	9.153	5.090	-	5.090	3.854	4.880	3.998	4.085	Continuing	Continuing
2929: *Testing Measuring Diag Equip & SE*	8.017	0.834	0.502	0.538	-	0.538	0.574	0.614	0.627	0.640	Continuing	Continuing
9C90: *MTVR Mod*	43.465	1.770	4.066	0.740	-	0.740	1.057	1.295	0.139	0.141	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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy					Date: February 2016
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	20.999	20.729	17.373	-	17.373
Current President's Budget	18.184	19.955	13.194	-	13.194
Total Adjustments	-2.815	-0.774	-4.179	-	-4.179
• Congressional General Reductions	-	-0.028			
• Congressional Directed Reductions	-	-0.746			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.337	0.000			
• SBIR/STTR Transfer	-0.477	0.000			
• Program Adjustments	0.000	0.000	-0.300	-	-0.300
• Rate/Misc Adjustments	-0.001	0.000	-3.879	-	-3.879

Change Summary Explanation

The $6.761M reduction from FY16 to FY17 is due to the completion of Mobile Electric Hybrid Power Sources (MEHPS) testing in support of Advanced Power Sources, attainment of the Medium Transport Vehicle Replacement Modification AAO and continued transition of the program into the sustainment phase and decreased testing requirements for Micro-Grid evaluation for Mobile Power Equipment.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
0201: *Logistical Veh Sys Replacement (LVSR)*	36.586	0.292	0.261	0.264	-	0.264	0.235	0.208	0.212	0.216	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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Product Development	0.000	0.131	0.132	0.000	0.132
Articles:	-	-	-	-	-
FY 2015 Accomplishments: N/A					
FY 2016 Plans: -Continue to support safety & Engineering Change Proposal (ECP) development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force (MAGTF) Expeditionary Maneuver Warfare as continual changes in threat environment requires an on-going and proactive approach.					
FY 2017 Base Plans: -Continue to support safety modification development and ECP development required to meet the diverse environments of current and future operations of MAGTF Expeditionary Maneuver Warfare as continual changes in threat environment requires an on-going and proactive approach.					
FY 2017 OCO Plans: N/A					
Title: Support	0.000	0.130	0.132	0.000	0.132
Articles:	-	-	-	-	-
FY 2015 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A ***FY 2016 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 2017 Base Plans:*** -Continue to provide engineer change support and safety support required to meet the diverse environments of current and future operations of MAGTF Expeditionary Maneuver Warfare as continual changes in threat environment requires an on-going and proactive approach. ***FY 2017 OCO Plans:*** N/A					
Title: Test and Evaluation	0.292	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Continued testing events to support safety & ECP development required to meet the diverse environments of current and future operations of MAGTF Expeditionary Maneuver Warfare. ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.292	0.261	0.264	0.000	0.264

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/5230: *Motor Transport Modifications*	4.418	6.938	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/5050: *Logistics Vehicle System Replacement*	0.464	2.310	1.768	-	1.768	1.347	1.962	2.011	2.050	Continuing	Continuing

Remarks

Motor Transport Modifications transferred from BLI 5230 to 5050 starting in FY17.
LVSR portion of PMC BLI 5050 IS ASSOCIATED WITH LVSR C0201

D. Acquisition Strategy

The Logistics Vehicle System Replacement (LVSR) program used 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 Engineering Change Proposals (ECPs) to maintain relevancy on the battlefield and implement system requirements.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Safety Mod Development	SS/FFP	Various : Various	1.796	0.000		0.066	Oct 2015	0.066	Jun 2017	-		0.066	Continuing	Continuing	Continuing
LVSR ECP Development	SS/FFP	Various : Various	1.050	0.000		0.065	Apr 2016	0.066	Jun 2017	-		0.066	0.000	1.181	-
Prior Years Cumulative Funding	C/FFP	Various : Various	17.398	0.000		0.000		0.000		-		0.000	0.000	17.398	-
		Subtotal	20.244	0.000		0.131		0.132		-		0.132	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Engineer Change Support	SS/FFP	Various : Various	0.743	0.000		0.130	May 2016	0.132	Jun 2017	-		0.132	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	1.648	0.000		0.000		0.000		-		0.000	0.000	1.648	-
		Subtotal	2.391	0.000		0.130		0.132		-		0.132	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR ECP Testing	MIPR	ATC : Aberdeen, MD	0.000	0.292	Oct 2015	0.000		0.000		-		0.000	0.000	0.292	-
Prior Years Cumulative Funding	Various	Various : Various	11.004	0.000		0.000		0.000		-		0.000	0.000	11.004	-
		Subtotal	11.004	0.292		0.000		0.000		-		0.000	0.000	11.296	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	2.947	0.000		0.000		0.000		-		0.000	0.000	2.947	-
		Subtotal	2.947	0.000		0.000		0.000		-		0.000	0.000	2.947	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.586	0.292		0.261		0.264		-		0.264	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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)*

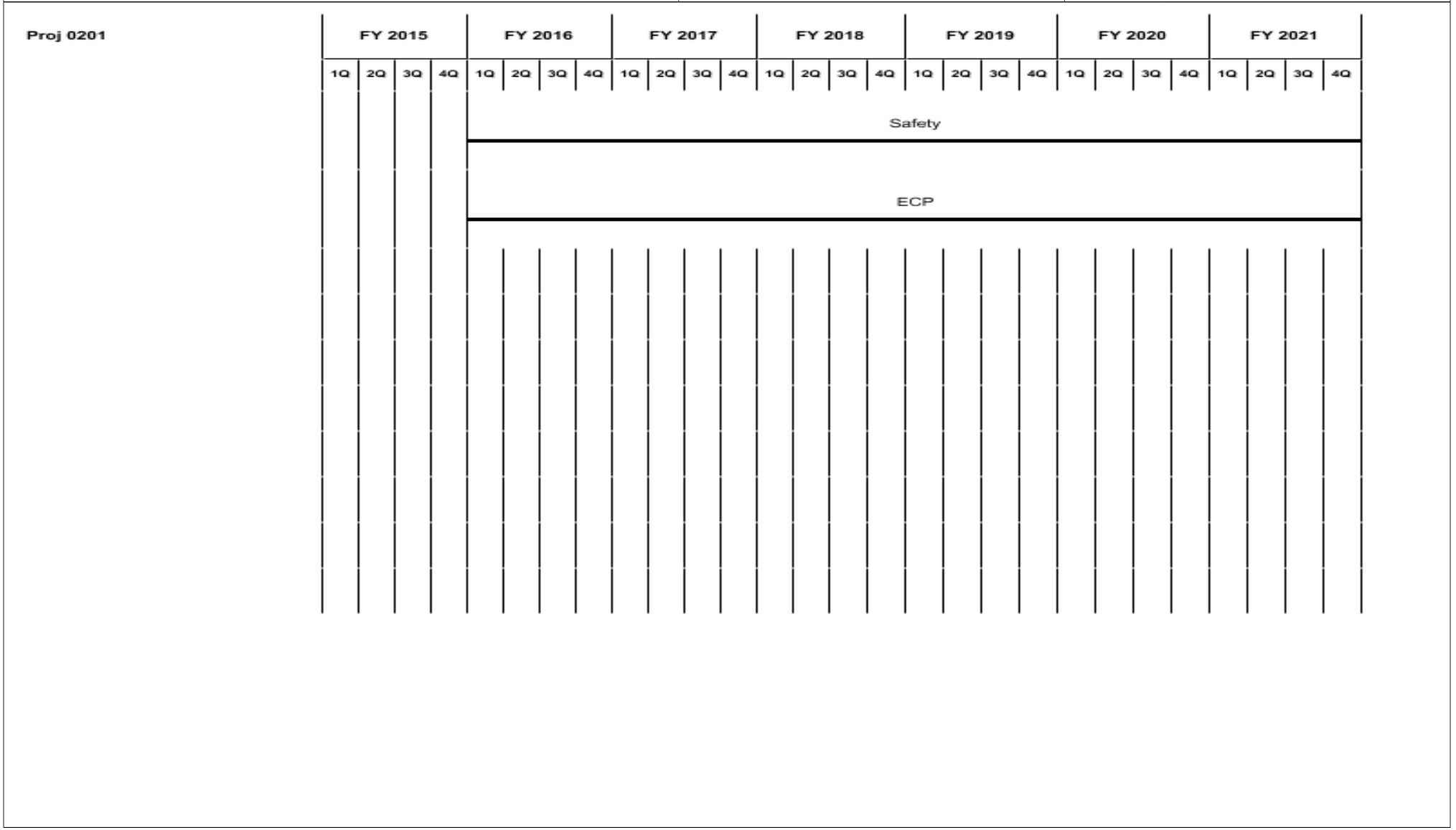


Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 0201 / *Logistical Veh Sys Replacement (LVSR)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0201				
Safety Mod Development	1	2016	4	2021
Engineering Change Proposal (ECP) Development	1	2016	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
2316: *Combat Service Support Eng Equip*	65.572	6.993	4.655	4.984	-	4.984	8.203	8.223	7.461	7.621	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 increased from FY16 to FY17 reflect completion of prior development projects and the initiation of required obsolescence mitigation.

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 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. Multiple vehicle categories (CATs) have been procured, fielded, and sustained: MRAP-All Terrain Vehicle (M-ATV) - Combat operations (ops) in rural, mountainous, urban terrain. 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. 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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Engineer Mods and Tool Kits	0.437	0.634	0.479	0.000	0.479
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Initiated support work for Matting application in support of the Engineer Family of Systems. -Initiated project management design and integration efforts supporting Route Reconnaissance and Clearance (R2C) Capability Set Integration Kits.					
FY 2016 Plans: -Continue support work for Matting applications in support of the Engineer Family of Systems. -Complete project management design and integration efforts supporting Route Reconnaissance and Clearance (R2C) Capability Set Integration Kits.					
FY 2017 Base Plans: -Initiate new Engineer Change Proposals in support of the Engineer Family of Systems.					
FY 2017 OCO Plans: N/A					
Title: M1A1 Modifications	2.618	1.084	1.319	0.000	1.319
Articles:	-	-	-	-	-
FY 2015 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.					
FY 2016 Plans: Complete the research and development effort for AIDATS and begin other development efforts such as the Radio Communication Integration upgrade.					
FY 2017 Base Plans: Begin obsolescence mitigation and upgrade development for the Firepower Enhancement Program (FEP) and upgrade the advanced gunnery training system with the most current capabilities. Increase of $0.235M is due to shift from AIDATS integration to FEP performance increase.					
FY 2017 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Title: Mine Resistant Ambush Protected Family of Vehicles	1.065	0.126	0.589	0.000	0.589
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Initiated research, development and ballistic testing associated with Engineering Change Proposals (ECP) such as survivability and mobility upgrades.					
FY 2016 Plans: Continue research and development of Engineering Change Proposals (ECPs) and armor ballistic testing in support of survivability and mobility upgrades.					
FY 2017 Base Plans: Continue research and development of Engineering Change Proposals (ECPs) and armor ballistic testing in support of survivability and mobility upgrades. Increase in funding from FY16 to FY17 of $0.463M supports new test events.					
FY 2017 OCO Plans: N/A					
Title: Corrosion Prevention and Control (CPAC)	2.873	2.811	2.597	0.000	2.597
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Continued and increased 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 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 following areas: Thermally Sprayed Metal Coatings (TSMC) for Corrosion Protection of Areas Subject to Wear,					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
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 2017 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 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 to include evaluation of Advanced CARC systems.. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	6.993	4.655	4.984	0.000	4.984

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/6670: *Items Less than $5M - CPAC & Eng Mods & Tool Kits*	4.663	4.322	4.342	-	4.342	4.406	4.644	4.740	4.831	Continuing	Continuing
• PMC/2061: *M1A1 Modification Kit*	18.034	11.528	12.577	-	12.577	14.837	15.162	15.268	15.565	Continuing	Continuing
• PMC/6520: *EOD Systems - MRAP*	0.243	0.047	0.346	-	0.346	1.149	1.211	1.235	1.259	Continuing	Continuing
• PMC/7000: *M1A1 Modification Kit*	0.000	2.090	4.380	-	4.380	0.361	0.000	0.000	0.000	0.000	6.831

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

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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*

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) 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.

(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.

(U) Mine Resistant Ambush Protected (MRAP): The Program will execute RDT&E funds to research, develop, and evaluate survivability and mobility upgrades such as the Cougar Egress and Seat Survivability Upgrades. Work will be accomplished through options on existing contracts of varying types to conduct research and analysis associated with the development of modifications and modeling and simulation efforts through Naval Surface Warfare Center, Panama City.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MRAP Modifications	WR	VARIOUS : VARIOUS	0.000	0.802	Apr 2015	0.000		0.188	Dec 2016	-		0.188	Continuing	Continuing	Continuing
M1A1 Modifications	C/FFP	MCSC : Quantico, VA	0.000	2.556	Mar 2015	0.000		0.400	Mar 2017	-		0.400	0.000	2.956	-
MRAP Engineering	WR	NSWC : Panama City, FL	2.212	0.000		0.126	Dec 2015	0.126	Dec 2016	-		0.126	Continuing	Continuing	Continuing
M1A1 Modifications	WR	SPAWAR : Charleston, SC	0.337	0.000		0.213	Jan 2016	0.000		-		0.000	0.000	0.550	-
M1A1 Modifications	MIPR	PM TRASYS : Orlando, FL	3.177	0.000		0.000		0.919	Jan 2017	-		0.919	0.000	4.096	-
M1A1 Modifications	MIPR	ABERDEEN PROVING GROUND : Aberdeen, MD	2.988	0.000		0.250	Jan 2016	0.000		-		0.000	0.000	3.238	-
M1A1 Modifications	MIPR	Picatinny Arsenal : Picatinny, NJ	1.174	0.000		0.383	Jan 2016	0.000		-		0.000	0.000	1.557	-
Prior Year Cumulative. Funding	Various	VARIOUS : VARIOUS	41.030	0.000		0.000		0.000		-		0.000	0.000	41.030	-
M1A1 Modifications	MIPR	NVL : Fort Belvoir, VA	0.000	0.062	Jan 2015	0.238	Jan 2016	0.000		-		0.000	0.000	0.300	-
		Subtotal	50.918	3.420		1.210		1.633		-		1.633	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : various	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
CPAC	C/FFP	NSWC-CD : Bethseda, MD	0.000	1.303	Dec 2014	1.155	Dec 2015	1.000	Dec 2016	-		1.000	0.000	3.458	-
		Subtotal	0.300	1.303		1.155		1.000		-		1.000	0.000	3.758	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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*	

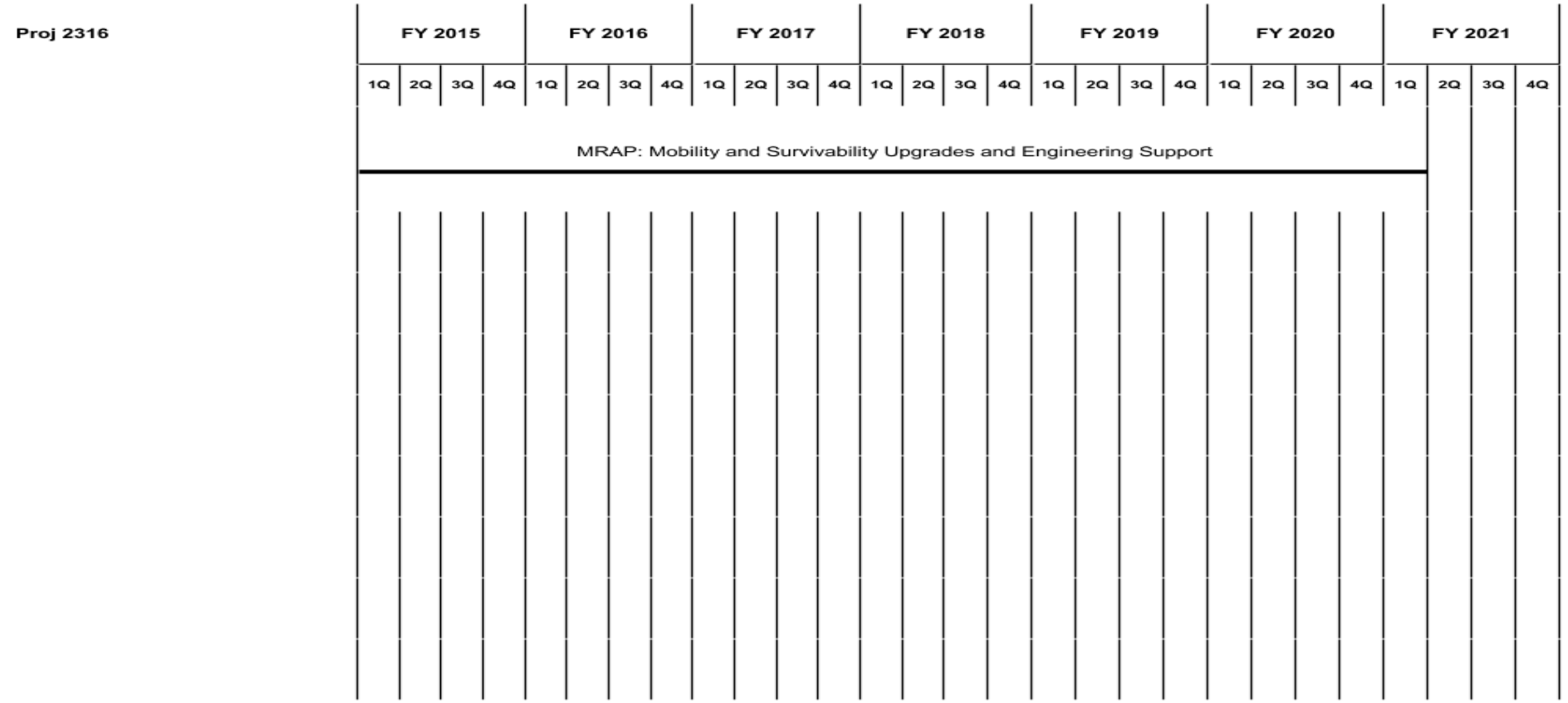
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MRAP FoV Ballistic Evaluations	MIPR	ATC : Aberdeen, MD	2.486	0.263	Jul 2015	0.000		0.275	Dec 2016	-		0.275	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	Various : Various	1.500	0.000		0.000		0.000		-		0.000	0.000	1.500	-
Engineer Modification Kits	MIPR	Aberdeen Proving Grounds : Aberdeen MD	1.429	0.437	Jan 2016	0.634	Feb 2016	0.479	Nov 2016	-		0.479	Continuing	Continuing	Continuing
CPAC	WR	NSWC-CD : Bethseda, MD	8.552	1.070	Nov 2014	1.156	Dec 2015	1.094	Dec 2016	-		1.094	0.000	11.872	-
CPAC	WR	NRL : Arlington, VA	0.387	0.500	Dec 2014	0.500	Dec 2015	0.503	Dec 2016	-		0.503	0.000	1.890	-
		Subtotal	14.354	2.270		2.290		2.351		-		2.351	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.572	6.993		4.655		4.984		-		4.984	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



2017PB - 0206624M - 2316

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2316				
Mobility and Survivability Upgrades and Engineering Support	1	2015	1	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
2509: *Motor Transport Mod*	39.842	3.735	1.318	1.578	-	1.578	1.195	1.205	1.233	1.260	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Marine Corps Tactical Motor Transport Modification (MTM) 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 M88A2 HERCULES project includes improvements in all areas of the M88A2 HERCULES 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 supported engineering studies and analysis to evaluate the vehicle performance, safety and reliability. This program does not have funding beyond the FY15 HMMWV project. Future Legacy HMMWV safety and reliability efforts will be funded as a part of the Motor Transport Modification project 2509.

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 (MAGTF), such as ammunition supply points, Petroleum, Oil, and Lubricant (POL) distribution points, or hazardous material storage facilities.

The Family of Trailers & Ancillary Equipment 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. Will develop long-term modernization plans for the medium and heavy trailers within the Marine Corps to address operating safety enhancements, mission maintainability enhancements, and crew ergonomic improvements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: M88A2 HERCULES	0.192	0.305	0.333	0.000	0.333

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Continued 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 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 2017 Base Plans:*** Continue 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 2017 OCO Plans:*** N/A					
Title: High Mobility Multipurpose Wheeled Vehicle ECV (HMMWV-ECV)	0.679	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Performed engineering studies and analysis to evaluate the vehicle performance, safety and reliability. Efforts focused on developing improvements to vehicle performance, safety and reliability. ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Title: P-19 Replacement	0.922	0.172	0.326	0.000	0.326
Articles:	-	-	-	-	-
FY 2015 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Continued testing of the P-19R in support of Low Rate Initial Production (LRIP) and Full Rate Production (FRP). ***FY 2016 Plans:*** -Continue testing of the P-19R in support of FRP. -Initiate development of system modifications that include (1) Auxiliary Power Unit (APU) phase I and test 10KW (kilowatt) for Engineering Change Proposals (ECP's); (2) APU and Heating Ventilation Air Conditioning (HVAC) phase II for ECP's. ***FY 2017 Base Plans:*** Continue to develop, test, and integrate system modifications to improve vehicle performance and correct deficiencies identified on P-19 Replacement in support of FRP. System modifications include: (1) APU phase I and test 10kW for ECP's; (2) APU and HVAC phase II for ECP's. The 10 kW APU will allow the vehicle crew to operate the HVAC independent of the primary engine. This will result in fuel consumption savings as well as reduced maintenance on the primary engine. ***FY 2017 OCO Plans:*** N/A					
Title: Motor Transport Modification (MTM)	0.099	0.108	0.724	0.000	0.724
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Evaluated, tested, and integrated 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 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 2017 Base Plans:*** Continue to evaluate, test, and integrate system modifications for the Legacy Light Tactical Vehicles to ensure effectiveness, improve vehicle safety, performance, and correct deficiencies identified for application on Motor Transportation Light Tactical assets, enabling the fleet to maintain mobility requirements. ***FY 2017 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Title: Family of Trailers & Ancillary Equipment	1.843	0.733	0.195	0.000	0.195
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Continued reliability testing to ensure effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet and also for the Medium/Heavy Tactical Trailers designed for the Medium Tactical Vehicle replacement (MTVR)/Logistical Vehicle System Replacement (LVSR), enabling the fleet to maintain mobility requirements. -Initiated development of off-road capability enhancement for the M870 in order to meet the LVSR performance envelope.					
FY 2016 Plans: Continue testing to ensure effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet and also for the Medium/Heavy Tactical Trailers designed for the Medium Tactical Vehicle replacement (MTVR)/Logistical Vehicle System Replacement (LVSR), enabling the fleet to maintain mobility requirements.					
FY 2017 Base Plans: Continue testing to ensure effectiveness of the Medium/Heavy Tactical Trailers designed for the Medium Tactical Vehicle replacement (MTVR)/Logistical Vehicle System Replacement (LVSR), enabling the fleet to maintain mobility requirements. The FY16 to FY17 decrease ($0.538M) is due to completion of testing to address MTVR Trailer safety and performance needs.					
FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	3.735	1.318	1.578	0.000	1.578

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/5230-02: *Motor T Mod*	4.418	1.108	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	121.269
• PMC/5045: *HMMWV*	45.804	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	52.708

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/5097-01: *Family of Trailers & Ancillary Equipment*	0.173	3.157	2.691	-	2.691	1.936	3.159	3.226	3.289	Continuing	Continuing
• PMC/2061-01: *M88A2 HERCULES Mod*	5.767	2.640	2.673	-	2.673	2.728	2.781	2.838	2.894	Continuing	Continuing
• PMC/4630-01: *M88A2 HERCULES Mod*	0.156	0.162	0.164	-	0.164	0.167	0.170	0.173	0.176	Continuing	Continuing
• PMC/5097-02: *MTVR Trailers*	9.938	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	78.645
• PMC/5006-02: *P19R*	10.925	16.540	58.741	-	58.741	70.170	0.327	0.355	0.361	Continuing	Continuing
• PMC/5050-03: *Motor T Mod*	0.000	0.000	4.302	-	4.302	3.993	3.302	3.370	3.436	0.000	18.403

Remarks

D. Acquisition Strategy

The M88A2 HERCULES 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.

The HMMWV Sustainment Modification Initiative (SMI) program was cancelled effective FY 2016. FY 2015 funding supported 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.

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. A Firm Fixed Price (FFP) contract was awarded in May 2013 with step-ladder pricing for procurement of large quantities. The contract structure provides for production, testing, and training. A delivery order can be placed in any year for production quantities up to 200 vehicles.

Motor Transport Modification (MTM) 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. MTM funding will be used for modifications required to increase MTM fleet readiness, safety and reliability. 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).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 Family of Trailers & Ancillary Equipment (FTT) management 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 to include (but not limited to) the M1076 PLS (Palletized Load System) Trailer, MK1077 Flatrack, MTVR Trailer, M870 Ton Low Bed, Mk970 Tactical Refueler and the Flatrack Refueler Capability (FRC).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
M88A2 HERCULES	MIPR	TACOM : Warren, MI	1.513	0.192	Feb 2015	0.305	Apr 2016	0.333	Apr 2017	-		0.333	Continuing	Continuing	Continuing
HMMWV HSMI Reconfiguration	C/FFP	NATC : Silver Springs, NV	0.000	0.396	Jun 2015	0.000		0.000		-		0.000	0.000	0.396	-
MTM (Heavy) Safety Testing	C/FFP	Oshkosh : Oshkosh, WI	0.000	0.058	Sep 2015	0.000		0.000		-		0.000	0.000	0.058	-
FTT (Medium) ECP Development	MIPR	NAMC : Warren, MI	0.000	0.000		0.185	Mar 2016	0.000		-		0.000	0.000	0.185	-
FTT (Heavy) ECP Development	MIPR	NAMC : Warren, MI	0.000	1.843	Jul 2015	0.000		0.000		-		0.000	0.000	1.843	-
FTT ECP Development	C/FFP	NATC : Carson City, CA	0.000	0.000		0.000		0.195	May 2017	-		0.195	Continuing	Continuing	Continuing
P-19 APU Development	WR	NSWC : Dahlgren, VA	0.000	0.000		0.000		0.161	Feb 2017	-		0.161	0.000	0.161	-
Prior Years Cumulative Funding	Various	Various : Various	28.127	0.000		0.000		0.000		-		0.000	0.000	28.127	19.769
		Subtotal	29.640	2.489		0.490		0.689		-		0.689	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
P19 Developmental Testing	C/BA	NATC : Carson City, NV	0.000	0.461	Sep 2015	0.000		0.000		-		0.000	0.000	0.461	-
P19 Reliability Testing	C/BOA	NATC : Carson City, NV	0.000	0.461	Jun 2015	0.172	Jun 2016	0.165	May 2017	-		0.165	Continuing	Continuing	Continuing
MTM (Light) Safety Testing	MIPR	SPAWAR : Charleston, SC	0.000	0.041	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
FTT (Heavy) Reliability Testing	C/FFP	NATC : Carson City, NV	0.000	0.000		0.370	Mar 2016	0.000		-		0.000	Continuing	Continuing	Continuing
FTT (Medium) Testing	MIPR	ATC : Aberdeen, MD	0.000	0.000		0.178	Aug 2016	0.000		-		0.000	Continuing	Continuing	Continuing
MTM Engineering Support	TBD	TBD : TBD	0.000	0.000		0.000		0.724	Dec 2016	-		0.724	0.000	0.724	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MTM Safety Testing (Phase 1)	WR	NSWC : Indian Head, MD	0.000	0.000		0.054	Oct 2015	0.000		-		0.000	0.000	0.054	-
MTM Safety Testing (Phase 2)	WR	NSWC : Indian Head, MD	0.000	0.000		0.054	Jan 2016	0.000		-		0.000	0.000	0.054	-
Prior Years Cumulative Funding	Various	Various : Various	9.699	0.000		0.000		0.000		-		0.000	0.000	9.699	-
		Subtotal	9.699	0.963		0.828		0.889		-		0.889	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMMWV Program Management	Various	Various : Various	0.503	0.283	Dec 2014	0.000		0.000		-		0.000	0.000	0.786	-
		Subtotal	0.503	0.283		0.000		0.000		-		0.000	0.000	0.786	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.842	3.735		1.318		1.578		-		1.578	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*

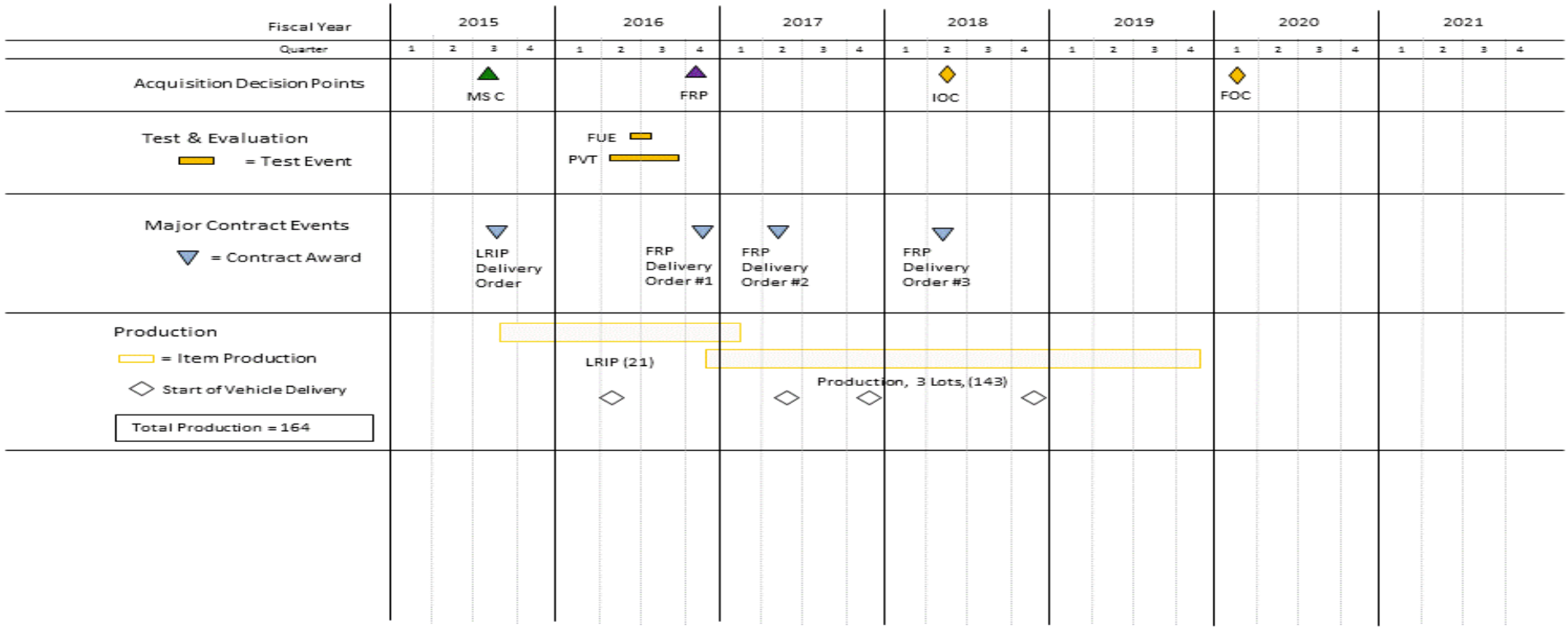


Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
P-19R				
Aquisition Decision Points: Milestone C	3	2015	3	2015
Aquisition Decision Points: Full Rate Production Decision	3	2016	3	2016
Aquisition Decision Points: Initial Operating Capability	2	2018	2	2018
Aquisition Decision Points: Full Operating Capability	1	2020	1	2020
Test and Evaluation: Production Verification Testing	2	2016	3	2016
Test and Evaluation: Field User Evaluation (FUE)	2	2016	3	2016
Major Contract Events: Low Rate Initial Production Award	3	2015	3	2015
Major Contract Events: Full Rate Production Award #1	4	2016	4	2016
Major Contract Events: Full Rate Production Award #2	2	2017	2	2017
Major Contract Events: Full Rate Production Award #3	2	2018	2	2018
Production: Low Rate Initial Production	3	2015	1	2017
Production: Full Rate Production 1, 2 and 3	4	2016	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
2510: *MAGTF CSSE & SE*	16.827	4.560	9.153	5.090	-	5.090	3.854	4.880	3.998	4.085	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 FY16 to FY17 funding increased by $0.060M to evaluate field refrigeration units.

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.

Efforts such as:
(1) Hybrid Generator: Funding to integrate new Advanced Medium Mobile Power Sources (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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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*

(2) AMMPS Digital Control System evaluation to provide tactical general gridding capability that will provide greater flexibility and reduce fuel consumption of networked generators.
(3) Evaluation of large energy storage devices that will reduce generator run time and reduce fuel consumption of networked generators.
(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.

The FY16 to FY17 funding decreased by $1.134M due to decreased testing requirements for Micro-Grid evaluation.

Advanced Power Sources:
The Advanced Power Sources 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 (MEHPS) 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 and 10-15kW power range. These systems will be smaller, lighter and more efficient systems that reduce the demand for fossil fuels. These efforts will transition into production of systems that integrate with the Tactical Quiet Generator (TQG), AMMPS, and future generator sets. The Battery Maintenance and Storage Shelter effort will focus on developing a modular solution to store and maintain a variety of battery form factors and chemistries. Providing an environmentally protected, deployable battery maintenance and storage shelter with the capability to maintain and condition deployable batteries will significantly decrease O&M costs to the Fleet by extending the life of fielded batteries.

The FY16 to FY17 funding decreased by $2.989M due to the completions of Mobile Electric Hybrid Power Sources (MEHPS) testing.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Environmental Control Equipment	0.403	0.202	0.262	0.000	0.262
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Completed prototype testing and integration of Engineering Change Proposals (ECPs) for the Enhanced Environmental Control Units (E2CUs). ***FY 2016 Plans:*** -Initiate design of legacy Environmental Control Units to increase energy efficiency. ***FY 2017 Base Plans:*** -Conduct evaluation for USMC Large Field Refrigeration Units (RU) replacements. ***FY 2017 OCO Plans:*** N/A					
Title: Mobile Power Equip/Hybrid Generator/Next Gen Power Distribution System	3.218	2.975	1.841	0.000	1.841

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Continued testing of the Next Generation Power Distribution system (AMEPDIS). -Initiated integration and testing of 1KW Generator with Ground Renewable Expeditionary Energy Systems (GREENS). ***FY 2016 Plans:*** -Initiate testing and evaluation of commercial Micro-Grid components and commercial Floodlight Sets. ***FY 2017 Base Plans:*** -Initiate evaluation of Energy Storage devices for use with large generators. ***FY 2017 OCO Plans:*** N/A					
Title: Advanced Power Sources	0.939	5.976	2.987	0.000	2.987
Articles:	4	12	6	-	6
FY 2015 Accomplishments: -Completed testing of Medium Hybrid Expeditionary Energy Systems (MHEES). -Continued test and evaluation of Mobile Electric Hybrid Power Sources (MEHPS) and developed test protocol. ***FY 2016 Plans:*** MOBILE ELECTRIC HYBRID POWER SOURCES (MEHPS) -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. ***FY 2017 Base Plans:*** MOBILE ELECTRIC HYBRID POWER SOURCES (MEHPS) -Initiate Mobile Electric Hybrid Power Sources (MEHPS) developmental testing and Battery Storage and Maintenance Shelter. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.560	9.153	5.090	0.000	5.090

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/6054: *Environmental Control Equipment*	0.989	0.000	0.018	-	0.018	1.401	4.528	3.375	3.441	Continuing	Continuing
• PMC/6366-1: *Mobile Power Equipment*	4.919	0.738	3.493	-	3.493	6.675	9.727	6.075	6.192	Continuing	Continuing
• PMC/6366-2: *Advanced Power Sources*	3.868	8.302	14.480	-	14.480	3.209	15.279	15.565	15.868	Continuing	Continuing

Remarks

D. Acquisition Strategy

Initial focus on development of more efficient 36,000 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 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.

The acquisition strategy is to focus on development of the Mobile Electric Hybrid Power System (MEHPS) and Battery Maintenance and Storage Shelter. 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. The developments will focus on making these systems smaller, lighter and more efficient. The MEHPS program will purchase 6 medium and 6 light systems from 2 vendors through competitively awarded EMD contracts. The Battery Maintenance and Storage Shelter will purchase 3 systems from 2 vendors through competitively awarded EMD contracts. Both systems will undergo rigorous electrical, environmental, safety, and performance testing to ensure the systems are robust and meet user requirements. Information learned in the EMD phase will help define the performance specification that will be used award full and open production contracts.

E. Performance Metrics

E2CU: Energy efficiency; size; weight; EPA-approved refrigerant; affordability; organically supportable.
MOBILE POWER: Energy efficiency; size; weight; affordability; organically supportable.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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*

MEHPS: 20% reduction in weight, 50% increase in power capability, 20% reduction in volume.
BMASS: Energy efficiency; size; weight; ability to charge specified batteries.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
APS MHEES/MEHPS Testing	MIPR	NSWC : CARDEROCK, MD	0.000	0.772	Dec 2015	0.000		0.000		-		0.000	0.000	0.772	-
APS Battery Storage and Maint Shelter	TBD	TBD : TBD	0.000	0.000		0.000		1.371	Jun 2017	-		1.371	0.000	1.371	-
E2CU DEVELOPMENT	C/FFP	VAR : VAR	0.000	0.000		0.202	Mar 2016	0.000		-		0.000	0.000	0.202	-
APS MEHPS EMD	C/IDIQ	TBD : TBD	0.000	0.000		5.976	Mar 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	VAR : VAR	11.122	0.000		0.000		0.000		-		0.000	0.000	11.122	-
		Subtotal	11.122	0.772		6.178		1.371		-		1.371	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VAR : VAR	0.059	0.000		0.000		0.000		-		0.000	0.000	0.059	-
		Subtotal	0.059	0.000		0.000		0.000		-		0.000	0.000	0.059	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ECE E2CU TESTING	Various	ABERDEEN TEST CENTER : ABERDEEN, MD	0.917	0.403	Apr 2015	0.000		0.000		-		0.000	0.000	1.320	-
APS Improved Solar Panel Test Support	MIPR	NSWC : CARDEROCK, MD	0.000	0.167	Jul 2015	0.000		0.000		-		0.000	0.000	0.167	-
APS MEHPS Testing (DT)	MIPR	ABERDEEN TEST CENTER : ABERDEEN, MD	0.000	0.000		0.000		1.616	Dec 2016	-		1.616	0.000	1.616	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ECE SFRS/LFRS EVALUATION	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	0.000		0.000		0.262	Dec 2016	-		0.262	0.000	0.262	-
Prior Year Cumulative Funding	Various	Various : Various	4.542	0.000		0.000		0.000		-		0.000	0.000	4.542	-
MPE MICRO GRID TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	1.051	Jun 2015	2.003	Feb 2016	1.271	Dec 2016	-		1.271	Continuing	Continuing	Continuing
MPE FLS AND 1KW INTEGRATION TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	0.000		0.972	Apr 2016	0.000		-		0.000	0.000	0.972	-
MPE MICRO-GRID EVALUATION	MIPR	PM E2S : FT BELVOIR VA	0.000	0.600	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	5.459	2.221		2.975		3.149		-		3.149	-	-	-

Management Services ($ in Millions)

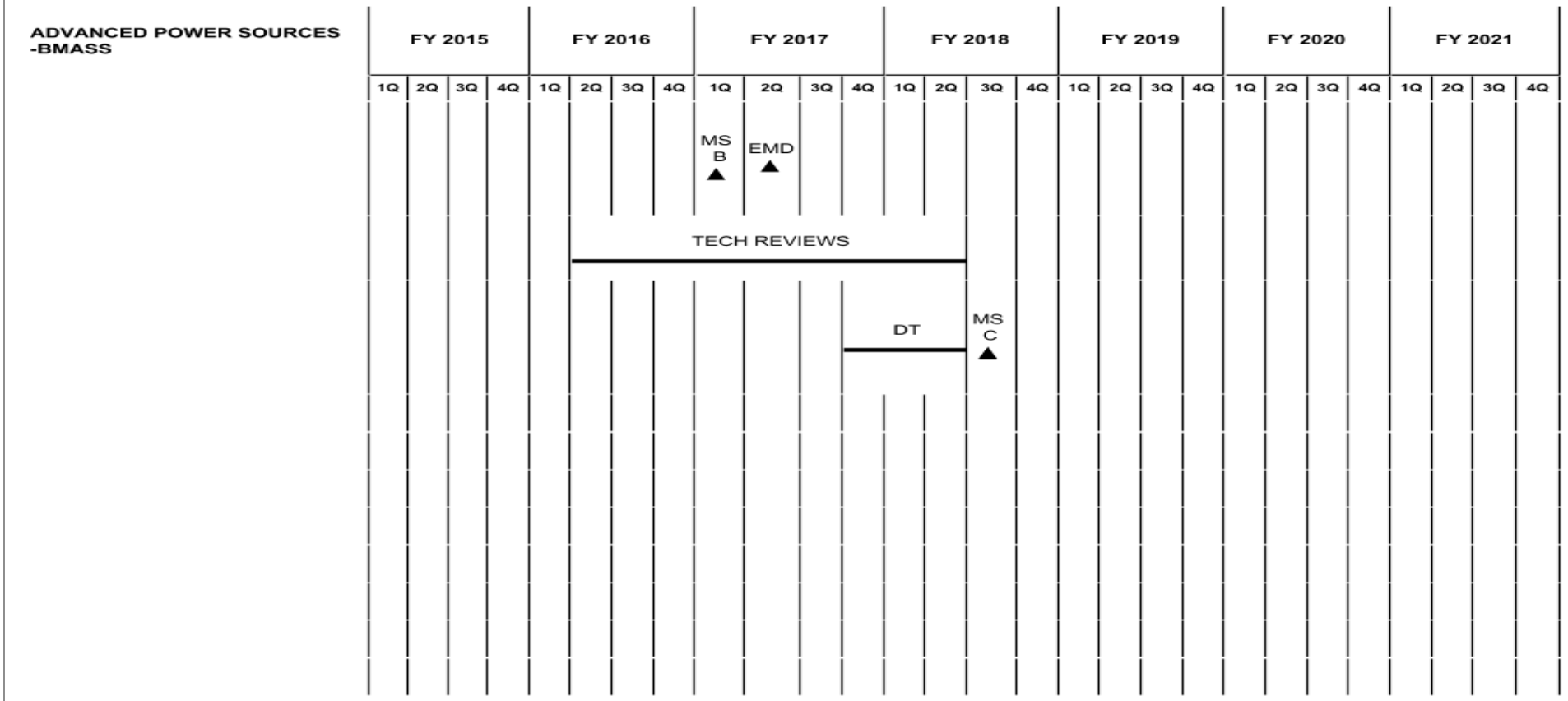
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MPE PM support for development and test mgmt	C/FFP	MCSC : Quantico, VA	0.187	1.567	Jul 2015	0.000		0.570	Jun 2017	-		0.570	0.000	2.324	-
		Subtotal	0.187	1.567		0.000		0.570		-		0.570	0.000	2.324	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.827	4.560		9.153		5.090		-		5.090	-	-	-

Remarks

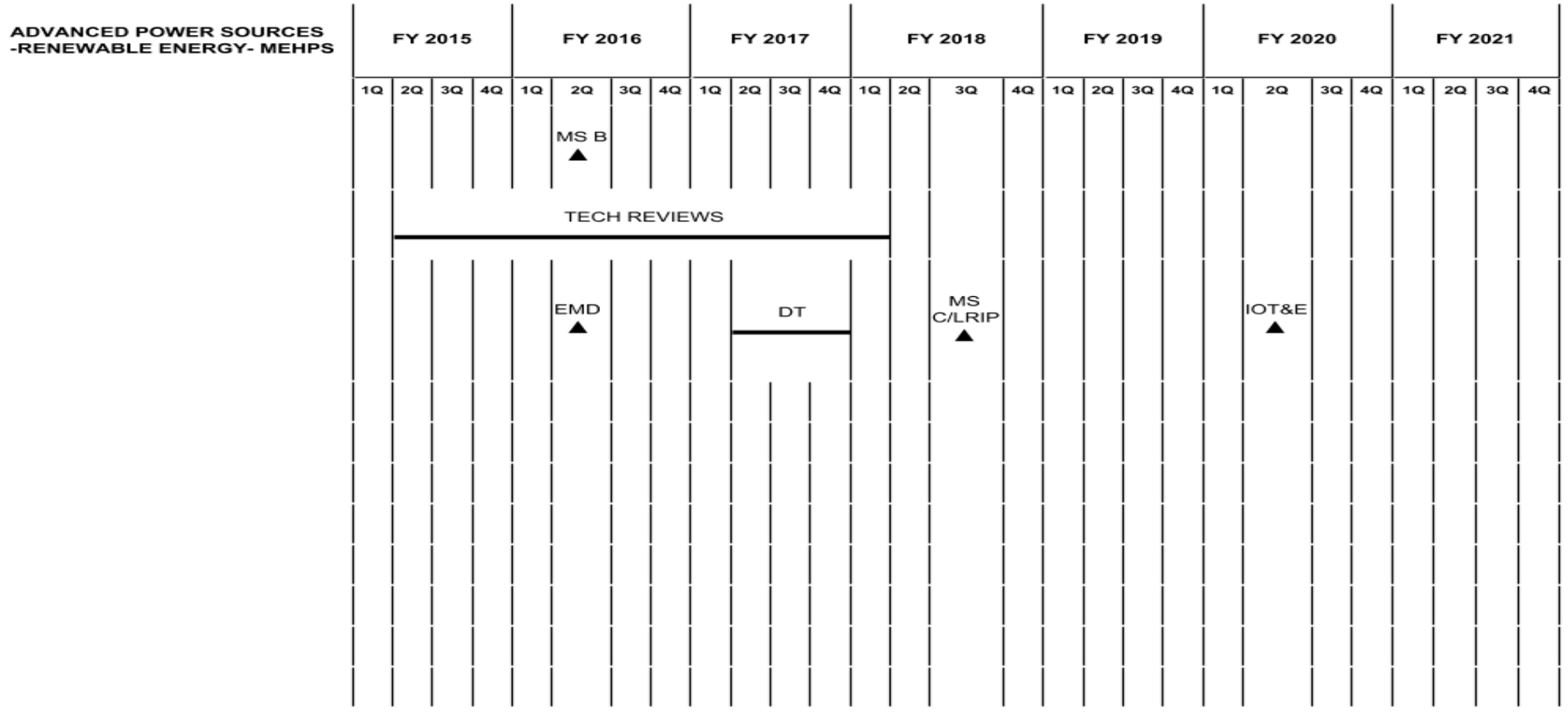
Environmental Control Equipment, Mobile Power Equipment and Advanced Power are part of Expeditionary Energy Initiatives.

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



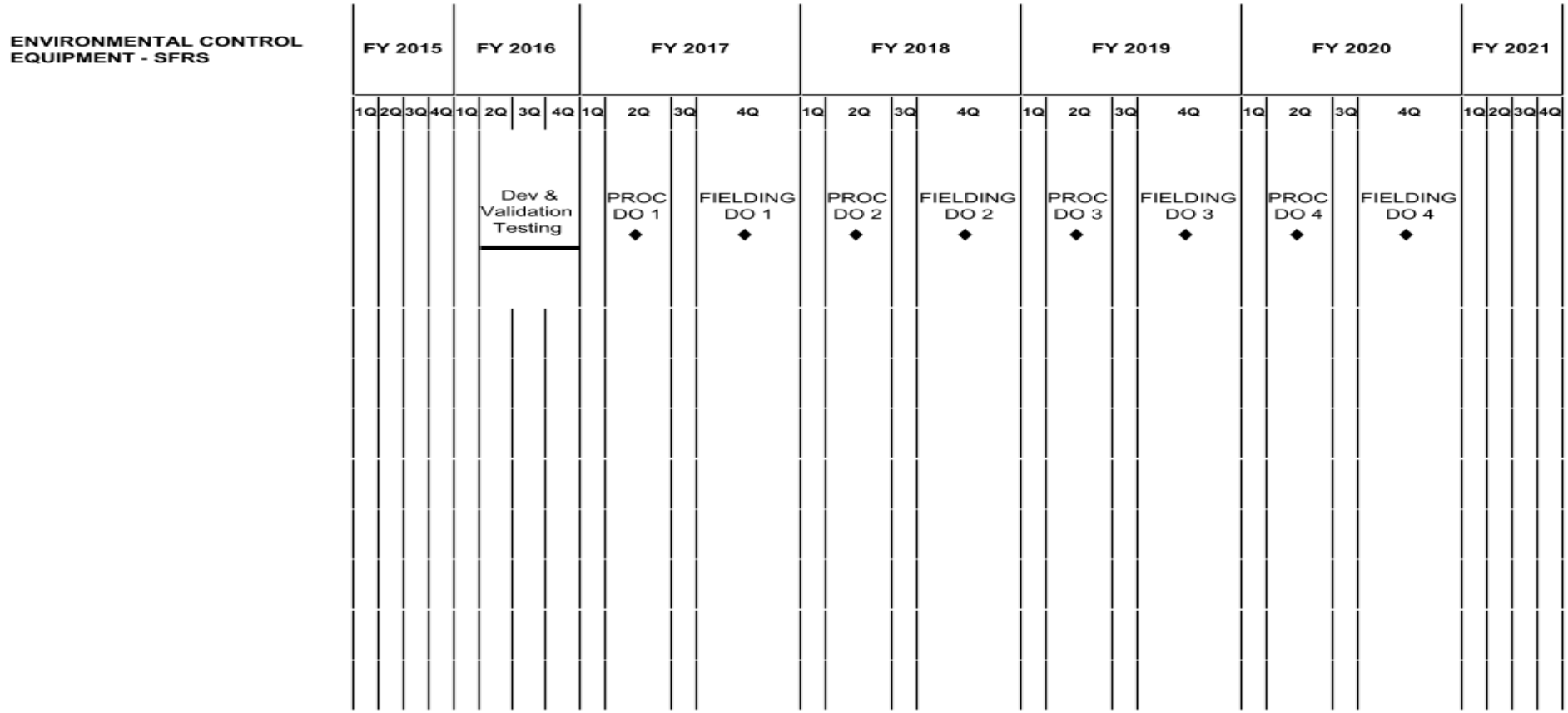
2017PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



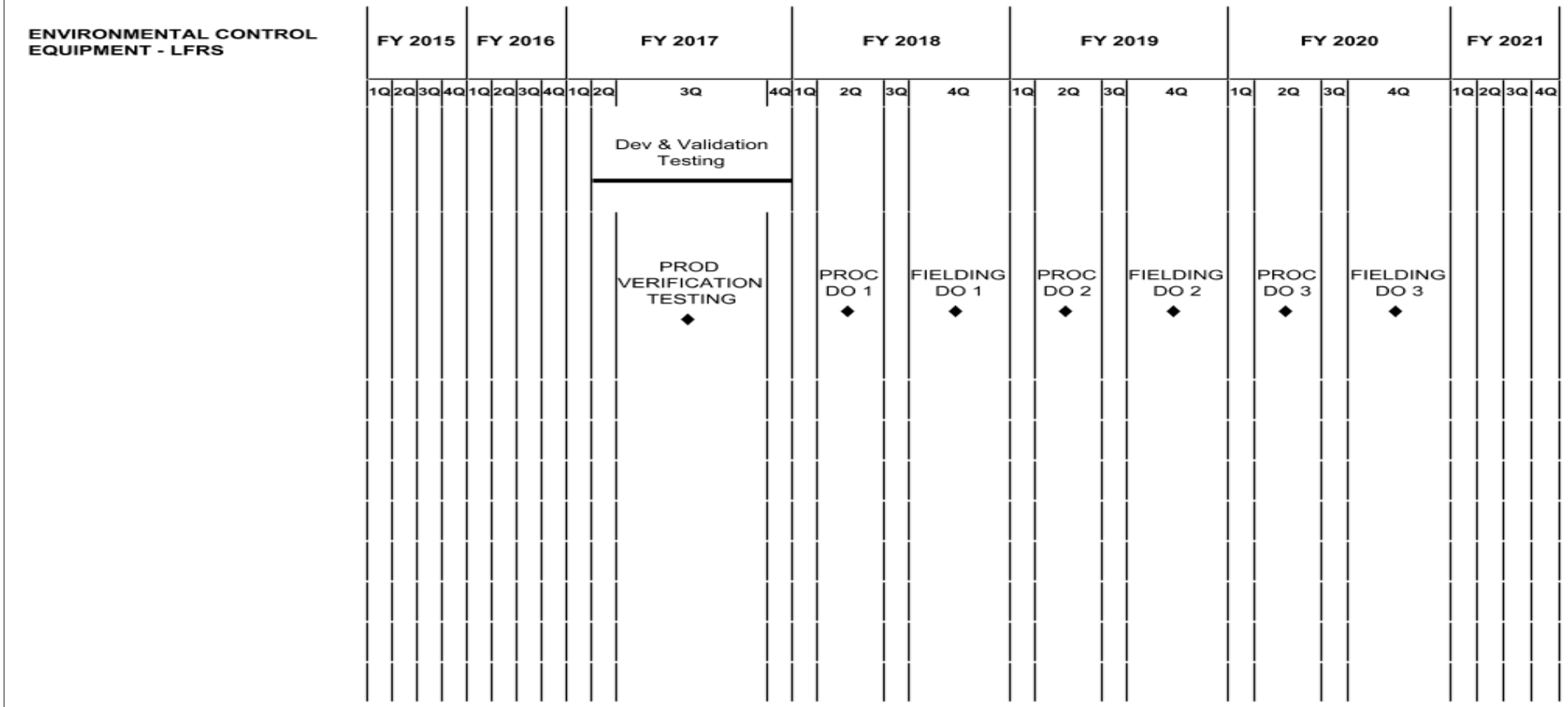
2017PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



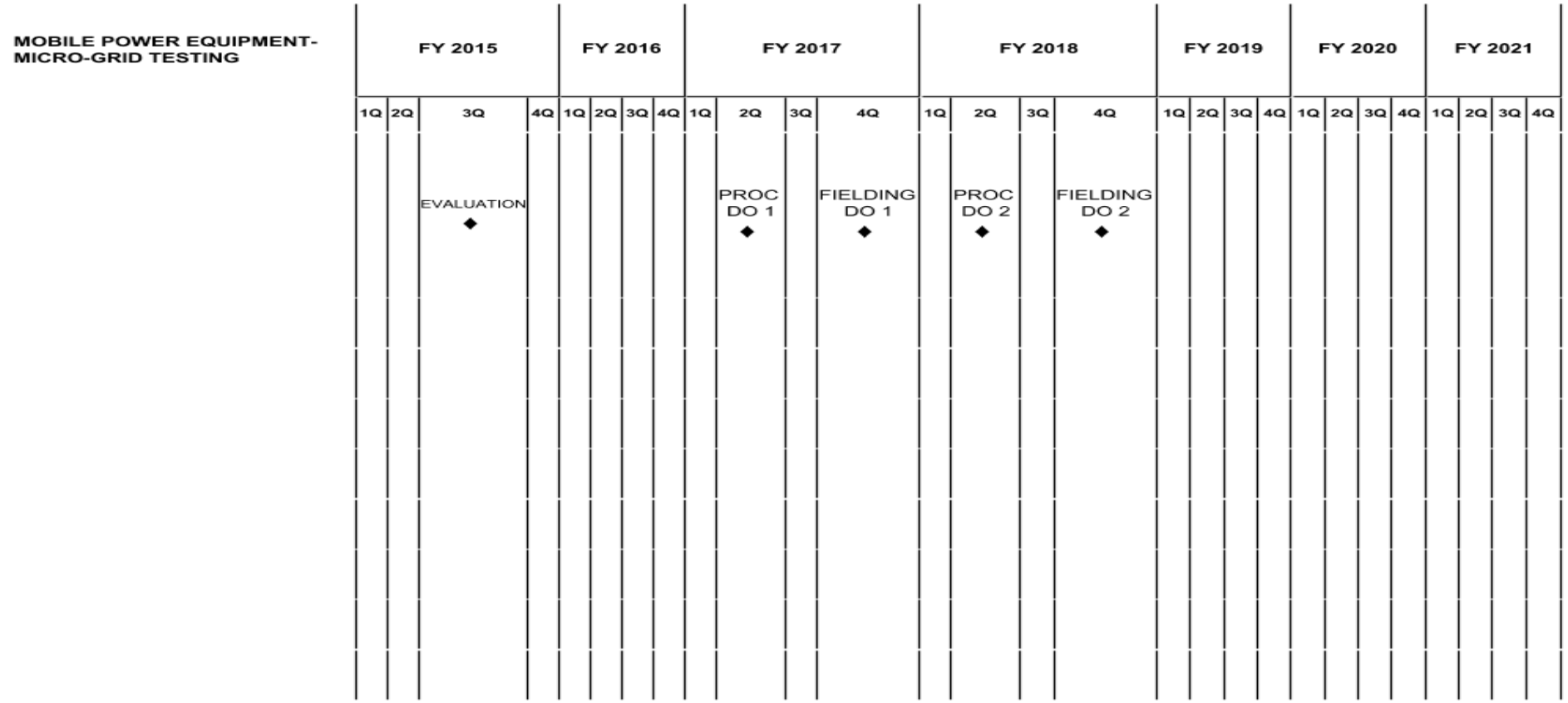
2017PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



2017PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



2017PB - 0206624M - 2510

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ADVANCED POWER SOURCES -BMASS				
MS B	1	2017	1	2017
CONTRACT AWARD	2	2017	2	2017
TECHNICAL REVIEWS	2	2016	2	2018
DEVELOPMENTAL TESTING (DT)	4	2017	2	2018
MS C	3	2018	3	2018
ADVANCED POWER SOURCES -RENEWABLE ENERGY- MEHPS				
MS B	2	2016	2	2016
TECHNICAL REVIEWS	2	2015	1	2018
DEVELOPMENTAL TESTING (DT)	2	2017	4	2017
MS C	3	2018	3	2018
CONTRACT AWARD	2	2016	2	2016
IOT&E	2	2020	2	2020
ENVIRONMENTAL CONTROL EQUIPMENT - SFRS				
TEST & EVALUATION	2	2016	4	2016
PROCUREMENT D.O. 1	2	2017	2	2017
FIELDING D.O.1	4	2017	4	2017
PROCUREMENT D.O. 2	2	2018	2	2018
FIELDING D.O. 2	4	2018	4	2018
PROCUREMENT D.O. 3	2	2019	2	2019
FIELDING D.O. 3	4	2019	4	2019
PROCUREMENT D.O.4	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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**
FIELDING D.O. 4	4	2020	4	2020
ENVIRONMENTAL CONTROL EQUIPMENT - LFRS				
TEST & EVALUATION	2	2017	4	2017
PRODUCTION VERIFICATION TESTING	3	2017	3	2017
PROCUREMENT D.O. 1	2	2018	2	2018
FIELDING D.O. 1	4	2018	4	2018
PROCUREMENT D.O. 2	2	2019	2	2019
FIELDING D.O. 2	4	2019	4	2019
PROCUREMENT D.O. 3	2	2020	2	2020
FIELDING D.O. 3	4	2020	4	2020
MOBILE POWER EQUIPMENT- MICRO-GRID TESTING				
EVALUATION	3	2015	3	2015
PROCUREMENT D.O. 1	2	2017	2	2017
FIELDING D.O. 1	4	2017	4	2017
PROCUREMENT D.O. 2	2	2018	2	2018
FIELDING D.O. 2	4	2018	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
2929: *Testing Measuring Diag Equip & SE*	8.017	0.834	0.502	0.538	-	0.538	0.574	0.614	0.627	0.640	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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Automatic Test Systems (ATS)	0.834	0.502	0.538	0.000	0.538
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Completed advanced technology concepts for automatic test and integrate the subsystems and components into fielded automatic test solutions to support weapon systems.					
FY 2016 Plans: -Continue to develop new advanced technology concepts for automatic test and integrate the subsystems and components into fielded automatic test solutions to support weapon systems.					
FY 2017 Base Plans: -Continue to develop new advanced technology concepts for automatic test and integrate the subsystems and components into fielded automatic test solutions to support weapon systems.					
FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.834	0.502	0.538	0.000	0.538

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/4181: *Automatic Test Systems (ATS)*	14.648	7.233	8.282	-	8.282	6.855	8.479	4.999	5.096	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Automatic Test Systems (ATS) acquisition is being done through U.S. Army Armament Research, Development & Engineering Center (ARDEC), Picatinny contracts; In-house at Marine Corps Logistics Command (MCLC), Albany, GA; Naval Supply Systems Command (NAVSUP), San Diego, CA; and Commercial Technologies for Maintenance Activities (CTMA) at OSD, Washington D.C.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATS Tech Eval & HW Radio Frequency	C/FFP	ARDEC : Picatinny, NJ	0.000	0.000		0.253	Apr 2016	0.000		-		0.000	0.000	0.253	-
ATS Study & Hardware 5	C/FFP	NAVSUP : San Diego, CA	0.911	0.200	Mar 2015	0.000		0.000		-		0.000	0.000	1.111	-
ATS Tech Eval & HW Digital Test	C/FFP	ARDEC : Picatinny, NJ	0.000	0.000		0.000		0.538	Mar 2017	-		0.538	0.000	0.538	-
ATS Study & Hardware 4	C/FFP	OSD : Washington, D.C.	0.500	0.500	Sep 2015	0.000		0.000		-		0.000	0.000	1.000	-
Prior Years Cumulative Funding	Various	N/A : N/A	2.901	0.000		0.000		0.000		-		0.000	0.000	2.901	-
		Subtotal	4.312	0.700		0.253		0.538		-		0.538	0.000	5.803	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support (ATS)	WR	MCLB : Albany, GA	3.705	0.134	Apr 2015	0.249	Feb 2016	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	3.705	0.134		0.249		0.000		-		0.000	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.017	0.834		0.502		0.538		-		0.538	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*

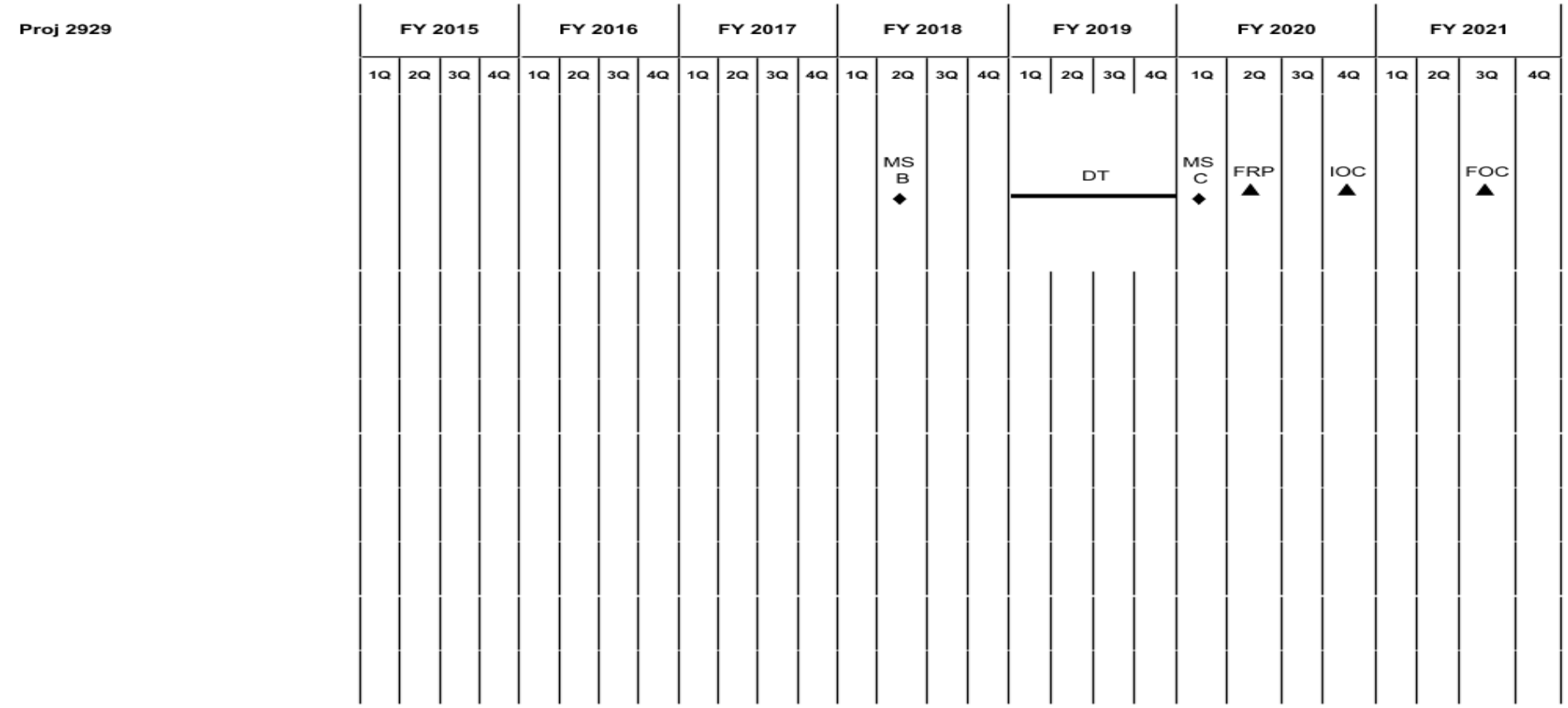


Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2929 / *Testing Measuring Diag Equip & SE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2929				
Milestone B	2	2018	2	2018
Milestone C	1	2020	1	2020
Full Rate Production Decision	2	2020	2	2020
Initial Operational Capability (IOC)	4	2020	4	2020
Full Operational Capability (FOC)	3	2021	3	2021
Developmental Testing	1	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
9C90: *MTVR Mod*	43.465	1.770	4.066	0.740	-	0.740	1.057	1.295	0.139	0.141	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Medium Transport Vehicle Replacement 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 decrease ($3.326M) from FY16 to FY17 is due to previous attainment of the AAO and continued transition of the program into the sustainment phase.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Product Development	1.586	1.969	0.423	0.000	0.423
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Initiated development of a Lightweight Cab for the MTVR to reduce fuel consumption over the life of the vehicle. -Supported the development of various ECPs due to continual changes in the threat environment which requires on-going vehicle modifications.					
FY 2016 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 to include the detailed design of individual components and subsystems. -Continue technical reviews on equipment developed. -Support the development of various ECPs due to continual changes in the threat environment which requires on-going vehicle modifications.					
FY 2017 Base Plans: -Continue detailed design and integration of fuel efficiency initiatives for the MTVR. -Continue development of ECPs required to respond to changes in threat environment and on-going vehicle modifications.					
FY 2017 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Title: Support	0.000	1.592	0.121	0.000	0.121
Articles:	-	-	-	-	-
FY 2015 Accomplishments: N/A					
FY 2016 Plans: -Resume activities in support of the MTVR vehicle such as 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. -Initiate support of energy initiatives aligning with the Commandant of the Marine Corps (CMC) priority for reducing energy costs, logistics footprint, and an improved environment. -Continue acquisition planning and logistics analyses associated with fuel efficiency improvements to the MTVR.					
FY 2017 Base Plans: -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. -Continue activities in support of the MTVR vehicle such as 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.					
FY 2017 OCO Plans: N/A					
Title: Test and Evaluation	0.184	0.505	0.196	0.000	0.196
Articles:	-	-	-	-	-
FY 2015 Accomplishments: -Continued Modeling & Simulation testing to support the MTVR.					
FY 2016 Plans: -Initiate Test & Evaluation efforts supporting ECP/safety mods of the MTVR. Also restarts Energy Initiative Test & Evaluation efforts, which support the CMC's priority for reducing energy costs, logistics footprint, and an improved environment.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
-Conduct design verification and design qualification testing of components and subsystems that achieve fuel efficiency of improvements on the MTVR. ***FY 2017 Base Plans:*** -Continue conducting design qualification testing and field user evaluations of components and subsystems that achieve fuel efficiency improvements on the MTVR. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.770	4.066	0.740	0.000	0.740

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PMC/5050: *MTVR Motor Transport Mods*	0.464	5.433	7.222	-	7.222	6.547	8.228	8.401	8.564	Continuing	Continuing

Remarks

MTVR portion of PMC BLI 5050 IS ASSOCIATED WITH MTVR C9C90

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.

The strategy for the MTVR Fuel Efficiency initiative will be to continue development activities once program is transitioned from the Office of Naval Research through the various Warfare Centers and perform Limited User Evaluation testing via Governmental/Commercial facilities.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Energy Efficiency (FNC) Development	WR	NSWC : Panama City, FL	0.000	0.000		1.722	Jun 2016	0.423	Apr 2017	-		0.423	Continuing	Continuing	Continuing
ECP Development	WR	NSWC : Panama City, FL	0.000	0.000		0.247	May 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Lightweight Cab Development	C/CPFF	Gravikor : Ann Arbor, MI	0.000	1.586	Mar 2015	0.000		0.000		-		0.000	0.000	1.586	-
Prior Years Cumulative Funding	Various	Various : Various	19.798	0.000		0.000		0.000		-		0.000	0.000	19.798	-
		Subtotal	19.798	1.586		1.969		0.423		-		0.423	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Energy Initiative	WR	NSWC : Panama City, FL	0.300	0.000		0.892	Jun 2016	0.121	Sep 2017	-		0.121	Continuing	Continuing	Continuing
ECP Support	C/CPFF	Oshkosh : Oshkosh,WI	0.000	0.000		0.300	Mar 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Safety Initiatives	C/CPFF	Oshkosh : Oshkosh,WI	0.000	0.000		0.400	Apr 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	10.762	0.000		0.000		0.000		-		0.000	0.000	10.762	-
		Subtotal	11.062	0.000		1.592		0.121		-		0.121	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Energy Initiative Testing	WR	Aberdeen Proving Ground : Aberdeen, MD	0.000	0.000		0.278	Jul 2016	0.196	Jun 2017	-		0.196	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling and Simulation (SIL)	WR	NSWC : Panama City, FL	0.000	0.000		0.050	Jun 2016	0.000		-		0.000	0.300	0.350	-
Survivability Kit Improvement M&S	C/CPFF	Corvid Tech : Mooresville, NC	0.000	0.184	Jan 2015	0.000		0.000		-		0.000	0.000	0.184	-
Safety Testing	WR	Aberdeen Proving Ground : Aberdeen, MD	0.000	0.000		0.177	Feb 2016	0.000		-		0.000	0.000	0.177	-
Prior Years Cumulative Funding	Various	Various : Various	12.605	0.000		0.000		0.000		-		0.000	0.000	12.605	-
		Subtotal	12.605	0.184		0.505		0.196		-		0.196	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	43.465	1.770		4.066		0.740		-		0.740	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

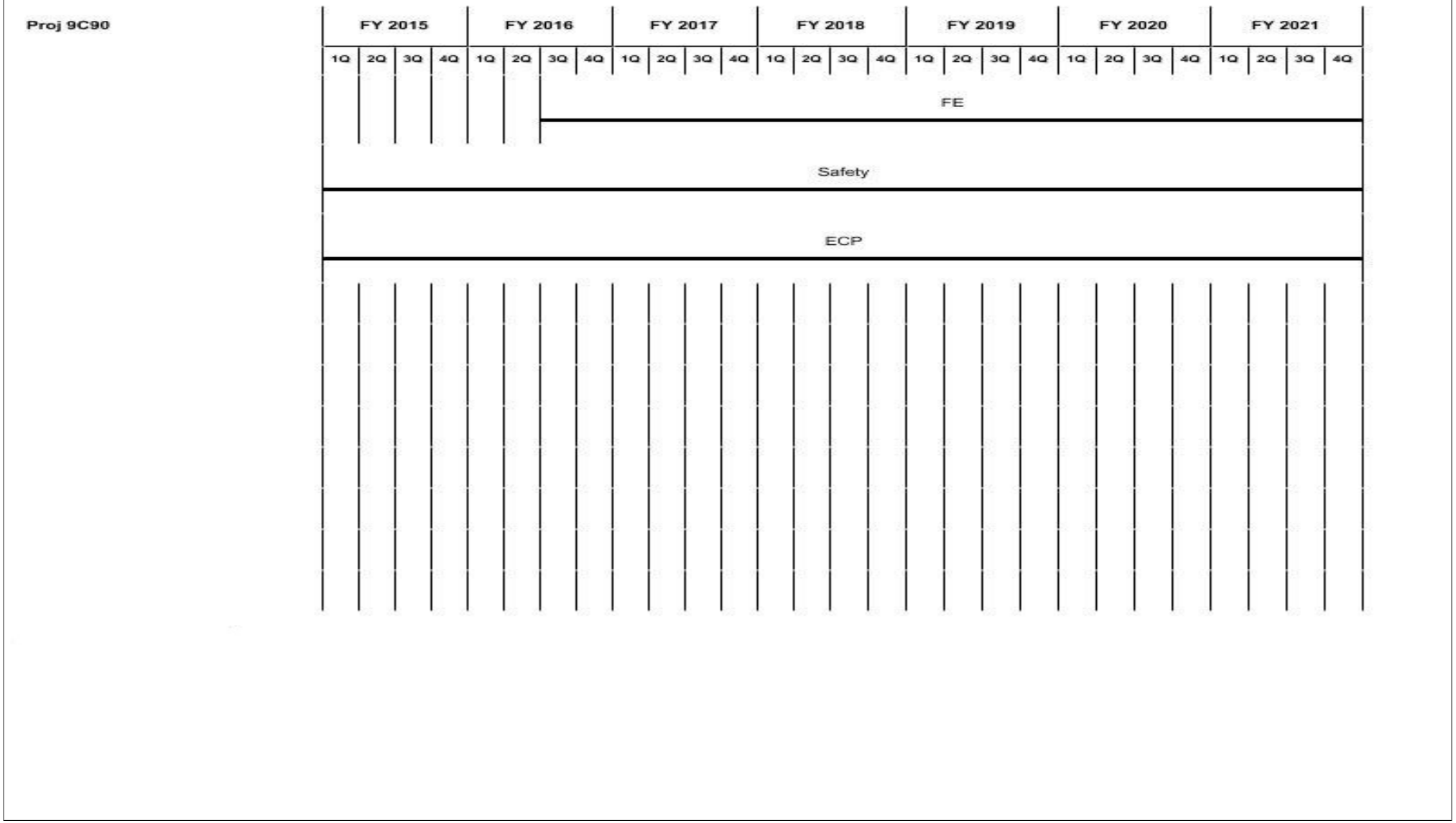


Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9C90				
Fuel Efficient Modifications	3	2016	4	2021
Safety Mod Development	1	2015	4	2021
ECP Development	1	2015	4	2021