

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy									Date: May 2017			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	178.993	-	178.993	79.782	33.530	33.305	61.287	Continuing	Continuing
0025: Amphibious Combat Vehicle 1.1	0.000	0.000	0.000	178.993	-	178.993	50.382	33.530	1.705	0.588	Continuing	Continuing
0026: Amphibious Combat Vehicle 1.2	0.000	0.000	0.000	0.000	-	0.000	29.400	0.000	31.600	60.699	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P472												
Note Beginning in FY18, the program funding transitions from Program Element 0603611M Marine Corps Assault Vehicles to Program Element 0605611M MC AVS Development and Demonstration as the program proceeds through the acquisition process.												
A. Mission Description and Budget Item Justification The Amphibious Combat Vehicle is an armored personnel carrier, balanced in performance, protection, and payload for employment within the Ground Combat Element (GCE) and throughout the range of military operations, to include a swim capability.												
B. Program Change Summary (\$ in Millions)				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total				
Previous President's Budget				0.000	0.000	0.000	-	0.000				
Current President's Budget				0.000	0.000	178.993	-	178.993				
Total Adjustments				0.000	0.000	178.993	-	178.993				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-							
• Congressional Rescissions				-	-							
• Congressional Adds				-	-							
• Congressional Directed Transfers				-	-							
• Reprogrammings				-	-							
• SBIR/STTR Transfer				-	-							
• Program Adjustments				0.000	0.000	178.992	-	178.992				
• Rate/Misc Adjustments				0.000	0.000	0.001	-	0.001				
Change Summary Explanation The increase from FY17 to FY18 of \$20.3M is primarily attributed to procurement of 4 Full Up System Level (FUSL) test vehicles and instrumentation for Live Fire Test and Evaluation and contractor support of IOT&E and LFT&E.												

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle 1.1			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
0025: Amphibious Combat Vehicle 1.1	0.000	0.000	0.000	178.993	-	178.993	50.382	33.530	1.705	0.588	Continuing	Continuing
Quantity of RDT&E Articles		-	-	4	-	4	-	-	-	-		
Project MDAP/MAIS Code: P472												
Note												
Beginning in FY18, the program funding transitions from Program Element 0603611M Marine Corps Assault Vehicles to Program Element 0605611M MC AVS Development and Demonstration as the program proceeds through the acquisition process.												
The increase from FY17 to FY18 of \$20.3M is primarily attributed to procurement of 4 Full Up System Level (FUSL) test vehicles and instrumentation for Live Fire Test and Evaluation and contractor support of IOT&E and LFT&E.												
A. Mission Description and Budget Item Justification												
The Amphibious Combat Vehicle (ACV) will be a partial and complementary replacement for the legacy Assault Amphibious Vehicle (AAV) battalions within the Marine Divisions. ACV-equipped AA companies will provide protected mobility and general support lift to elements of Marine Infantry Battalions. The ACV, an advanced generation, eight-wheeled armored personnel carrier, will mitigate current and projected capability gaps by providing improved lethality against dismounted enemy troops, more effective land and water tactical mobility, and increased force protection and survivability from blast, fragmentation, and kinetic energy threats. The ACV program is structured to be executed in multiple phases, with the first phase designed to provide an initial operational capability of personnel carriers. Subsequent phases are planned to expand the personnel carrier capacity and to develop additional command and control and tactical recovery capabilities.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	
Title: Product Development							0.000	0.000	138.833	0.000	138.833	
							Articles: -	-	4	-	4	
Description: System Design and Development; EMD test vehicle manufacturing; prime contractor Developmental and Operational test, and development of Logistics Management Information (LMI) data.												
The increase in Product & Development between FY17 to FY18 (\$29.297M) is attributed to the procurement of 4 Full-up System Level (FUSL) vehicles, Contractor support of Initial Operational Test & Evaluation (IOT&E) and Live Fire Test & Evaluation (LFT&E), and FUSL-vehicle Government Furnished Equipment (GFE) procurement.												
FY 2016 Accomplishments:												

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration		Project (Number/Name) 0025 / Amphibious Combat Vehicle 1.1		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Details provided in PE 0603611M/Project 0025 <b>FY 2017 Plans:</b> - Details provided in PE 0603611M/Project 0025 <b>FY 2018 Base Plans:</b> - Continue contractor Developmental Test activities. - Complete corrective action modifications which resulted from Reliability Growth Testing (RGT). - Initiate procurement of 4 Full-Up System Level (FUSL) Live Fire vehicles. - Initiate procurement of GFE communication suites and Remote Weapon Station (RWS) for FUSL end items. - Initiate advance capabilities improvements, Developmental Test (DT), Initial Operational Test & Evaluation (IOT&E) and Live Fire Test & Evaluation (LFT&E) support for the down-selected contractor. <b>FY 2018 OCO Plans:</b> N/A						
<b>Title:</b> Management Services <div>Articles:</div> <b>Description:</b> Contract Advisory and Assistance Services (Engineering and Technical Support, Management Support Services, and Studies and Analyses).  The increase in Management Support Services between FY17 & FY18 (\$0.209K) is attributed to the additional logistics and test and evaluation support (\$1.254M) and the reduction of Engineering and Technical Services (\$1.045M) due to the completion of the NATC Tire Study and decrease in Modeling & Simulation (M&S) Force Protection effort.  <b>FY 2016 Accomplishments:</b> - Details provided in PE 0603611M/Project 0025 <b>FY 2017 Plans:</b> - Details provided in PE 0603611M/Project 0025 <b>FY 2018 Base Plans:</b> - Continue business, acquisition, logistics, and engineering related activities for program document development, program analysis, acquisition logistics management, and financial management support. - Continue engineering and technical services for RWS, logistical, maintenance support, and integration.		0.000 -	0.000 -	7.242 -	0.000 -	7.242 -

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration		Project (Number/Name) 0025 / Amphibious Combat Vehicle 1.1		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
<div>- Continue force protection modeling and simulation activities.</div> <div>- Continue Depot Source of Repair (DSOR) Analyses on secondary repairable items, and product support Business Case Analysis on support concepts.</div> <div>- Continue analyses of product support elements to support Maintenance Plan development, Support and Test Equipment, Calibration, and other logistics elements.</div> <div>FY 2018 OCO Plans: N/A</div>						
<div>Title: Program Support</div> <div>Articles:</div> <div>Description: Government labor, material, and travel for Integrated Logistics Support, Technical Publications, Support Equipment development, In-house Technical Support, and Program Management Support.</div> <div>FY 2016 Accomplishments: - Details provided in PE 0603611M/Project 0025</div> <div>FY 2017 Plans: - Details provided in PE 0603611M/Project 0025</div> <div>FY 2018 Base Plans: - Continue Engineering Support for communication suite integration efforts documented during technical information and review meetings.</div> <div>- Continue procurement, inventory, checkout, kitting, shipment, and troubleshooting of ACV 1.1 communications suite Government Furnished Property (GFP) for FUSL test vehicles.</div> <div>- Continue Reliability, Availability, and Maintainability (RAM-D), and human systems integration activities for ACV 1.1.</div> <div>- Continue Digital Integrated Facility (DIF) architecture support.</div> <div>- Complete RWS marinization and integration support.</div> <div>- Continue technical support for training packages.</div> <div>- Initiate development of Training Devices/Simulators for ACV 1.1.</div> <div>FY 2018 OCO Plans: N/A</div>		0.000 -	0.000 -	7.620 -	0.000 -	7.620 -
Title: Test & Evaluation		0.000	0.000	25.298	0.000	25.298

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Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle 1.1					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Articles:									-	-	-	-	-
Description: Government Developmental, Operational, and Live Fire test and evaluation activities.													
FY 2016 Accomplishments: - Details provided in PE 0603611M/Project 0025													
FY 2017 Plans: - Details provided in PE 0603611M/Project 0025													
FY 2018 Base Plans: - Continue LFT&E activities. - Continue Developmental Testing. - Initiate Operational Assessment (OA).													
FY 2018 OCO Plans: N/A													
Accomplishments/Planned Programs Subtotals									0.000	0.000	178.993	0.000	178.993
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost		
• PMC/2025: Amphibious Combat Vehicle 1.1	0.000	0.000	161.511	-	161.511	169.811	316.064	471.775	0.761	0.000	1,119.922		
• PMC/7000/0605611M: Initial Spares - ACV 1.1	0.000	0.000	5.569	-	5.569	6.221	14.115	13.798	0.000	0.000	39.703		
• PMC/2026: Amphibious Combat Vehicle 1.2	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	603.826	0.000	603.826		
• RDTEN/0603611M/0025: Marine Corps Assault Vehicles	196.991	158.682	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	584.911		
• PMC/7000/0605611M: Initial Spares - ACV 1.2	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	19.539	0.000	19.539		
• RDTE/0605611M/0026: Amphibious Combat Vehicle 1.2	0.000	0.000	0.000	-	0.000	29.400	0.000	31.600	60.699	Continuing	Continuing		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Navy			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605611M / (U) MC AVS Development & Demonstration	<b>Project (Number/Name)</b> 0025 / Amphibious Combat Vehicle 1.1	

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

<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u> <u>Base</u>	<u>FY 2018</u> <u>OCO</u>	<u>FY 2018</u> <u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**D. Acquisition Strategy**

The program office awarded two competitive Engineering, Manufacturing and Development (EMD) contracts to two vendors to build 16 vehicles each (32 total). ACV Increment 1.1 entered the acquisition cycle at Milestone B in FY16 and will down-select to one vendor at Milestone C. In FY18, the program will enter into Low Rate Initial Production (LRIP) and Full Rate Production (FRP) will begin in FY20.

**E. Performance Metrics**

Milestone Reviews  
Milestone B: 1QFY16  
Milestone C: 3QFY18

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle 1.1					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
System Design &Development	C/FPIF	Various : Various	0.000	0.000		0.000		136.288	Jan 2018	-		136.288	47.394	183.682	-
Other Product Devolpment	C/FFP	SPAWAR : New Jersey/Charleston/ Picatinny	0.000	0.000		0.000		2.546	Jan 2018	-		2.546	0.000	2.546	-
Subtotal			0.000	0.000		0.000		138.834		-		138.834	47.394	186.228	-
Remarks															
- The increase in System Design & Development between FY17 & FY18 (\$29.489M) is attributed to procurement of 4 FUSL Vehicles and Contractor support of IOT&E and LFT&E.															
- Other Product Development provides GFE (Communication Suites and Remote Weapons Stations (RWS)) for FUSL test purposes.															
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Integrated Logistics Support	WR	NSWC-Dahlgren : Dahlgren, VA	0.000	0.000		0.000		0.425	Apr 2018	-		0.425	0.825	1.250	-
Technical Data & Pubs Development	WR	SPAWAR : Charleston, SC	0.000	0.000		0.000		0.100	Sep 2018	-		0.100	0.000	0.100	-
GFP Management	WR	SPAWAR : Charleston, SC	0.000	0.000		0.000		4.687	Apr 2018	-		4.687	2.215	6.902	-
Training Devices/ Simulators	TBD	TBD : TBD	0.000	0.000		0.000		2.286	Apr 2018	-		2.286	2.041	4.327	-
Travel	Various	Various : Various	0.000	0.000		0.000		0.122	Sep 2018	-		0.122	0.280	0.402	-
Subtotal			0.000	0.000		0.000		7.620		-		7.620	5.361	12.981	-
Remarks															
- FY18 initiates development of ACV 1.1 Training Devices/Simulators needed to support the system.															

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle 1.1					
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Development Test & Evaluation	WR	Various : Various	0.000	0.000		0.000		15.081	Jan 2018	-		15.081	10.317	25.398	-
Operational Test & Evaluation	WR	MCOTEA : Quantico,VA	0.000	0.000		0.000		2.348	Jan 2018	-		2.348	12.316	14.664	-
Live Fire Test & Evaluation	WR	Various : Various	0.000	0.000		0.000		7.868	Jan 2018	-		7.868	8.509	16.377	-
Subtotal			0.000	0.000		0.000		25.297		-		25.297	31.142	56.439	-
Remarks															
- The increase in Live Fire Test & Evaluation between FY17 to FY18 (\$1.282M) is attributed to FUSL instrumentation procurements.															
* The FY 2017 award date for cost categories with various activities is the actual obligation date for the last award in the category.															
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 and Technical Services	C/FFP	Various : Various	0.000	0.000		0.000		0.900	Jul 2018	-		0.900	1.256	2.156	-
Management Support Services	C/FFP	DDG : Stafford, VA	0.000	0.000		0.000		6.042	Mar 2018	-		6.042	0.450	6.492	-
Studies and Analysis	C/FFP	Various : Various	0.000	0.000		0.000		0.300	Jul 2018	-		0.300	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		7.242		-		7.242	-	-	-
Remarks															
- The increase in Management Support Services between FY17 and FY18 (\$1.254M) is attributed to the addition of logistics and test and evaluation support ongoing efforts such as OA, SVR, and PRR.															
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		0.000		178.993		-		178.993	-	-	-
Remarks															



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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy

Date: May 2017

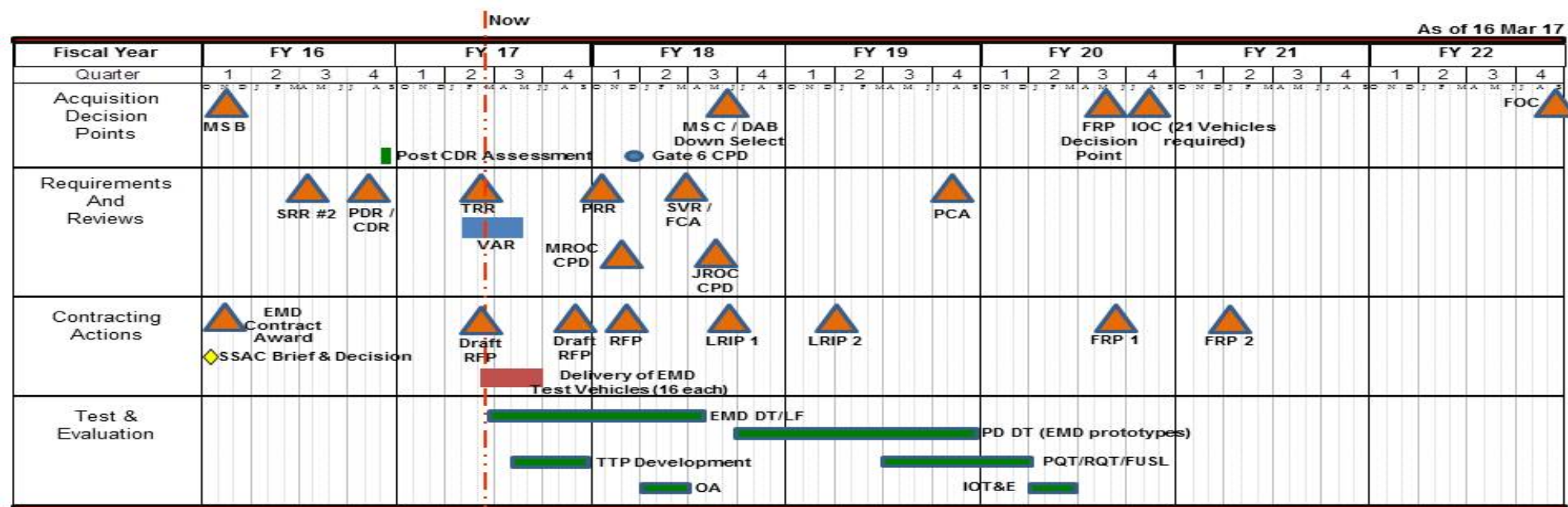
Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0605611M / (U) MC AVS Development  
& Demonstration

Project (Number/Name)  
0025 / Amphibious Combat Vehicle 1.1

Unclassified (U)

# ACV 1.1 Program Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details: FY 2018 Navy</b>			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605611M / (U) MC AVS Development & Demonstration	<b>Project (Number/Name)</b> 0025 / Amphibious Combat Vehicle 1.1	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0025</b>				
MS B	1	2016	1	2016
EMD Contract Award	1	2016	1	2016
Systems Readiness Review 2	3	2016	3	2016
Preliminary Design Review/Critical Design Review	4	2016	4	2016
EMD Vehicle Delivery (32 Vehicles)	2	2017	3	2017
Vehicle Acceptance Review	2	2017	3	2017
Development Test/Live Fire Test	2	2017	1	2020
TPP Development	3	2017	4	2017
Operational Assessment (OA)	2	2018	3	2018
Production Readiness Review (PRR)	1	2018	1	2018
System Verification Review (SVR)	2	2018	2	2018
Capabilities Production Document (CPD)	3	2018	3	2018
MS C/DAB Down Select	3	2018	3	2018
LRIP Option 1 Exercised	3	2018	3	2018
PCA	4	2019	4	2019
LRIP Option 2 Exercised	2	2019	2	2019
Initial Operational Test & Evaluation (IOT&E)/Full Up System Level (FUSL)	2	2020	2	2020
FRP Decision	3	2020	3	2020
FRP #1 Option Exercised	3	2020	3	2020
IOC	4	2020	4	2020
FRP #2 Option Exercised	2	2021	2	2021

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration	Project (Number/Name) 0025 / Amphibious Combat Vehicle 1.1	

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
FOC	4	2022	4	2022

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605611M / (U) MC AVS Development & Demonstration				Project (Number/Name) 0026 / Amphibious Combat Vehicle 1.2			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
0026: Amphibious Combat Vehicle 1.2	0.000	0.000	0.000	0.000	-	0.000	29.400	0.000	31.600	60.699	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Amphibious Combat Vehicle (ACV) will be a partial and complementary replacement for the legacy Amphibious Assault Vehicle (AAV) battalion's within the Marine Divisions. ACV-equipped AA companies will provide protected mobility and general support lift to elements of Marine Infantry Battalions. The ACV, an advanced generation, eight-wheeled armored personnel carrier, will mitigate current and projected capability gaps by providing improved lethality against dismounted enemy troops, more effective land and water tactical mobility, and increased force protection and survivability from blast, fragmentation, and kinetic energy threats. The ACV program is structured to be executed in multiple phases, with the first phase designed to provide an initial operational capability of personnel carries. Subsequent phases are planned to expand the personnel carrier capacity and to develop additional command and control and tactical recovery capabilities. ACV 1.2 will provide the Marine Corps with armored protected land mobility to effectively maneuver with the rest of the armored MAGTF, the direct fire lethality to support infantry maneuver, and the water mobility to self-deploy from amphibious shipping. In addition to fielding more ACV personnel variants, ACV 1.2 will develop and field Command & Control and Recovery variants.