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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>					R-1 Program Element (Number/Name) PE 0604320M I (U) <i>Rapid Technology Capability Prototype</i>							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	6.786	6.986	4.558	3.664	-	3.664	9.203	6.190	6.425	8.045	Continuing	Continuing
0386: <i>Rapid Prototype Development, Marine Corps</i>	6.786	6.986	4.558	3.664	-	3.664	9.203	6.190	6.425	8.045	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Commandant of the Marine Corps (CMC) directed the formation of the Marine Corps Rapid Capabilities Office (MCRCO) to accelerate the identification, development, and assessment of emergent and disruptive technology. The MCRCO seeks emergent and disruptive technology to rapidly develop and assess operational prototypes that increase Marine Air Ground Task Force survivability and lethality by providing operational assessments to accelerate requirement development and investment planning. MCRCO conducts data collection at intervals throughout this period of time to capture Tactics, Techniques, and Procedures (TTPs), military utility, and system performance. Prototypes will be assessed at a Technology Readiness Level 7 (TRL 7) or higher, being either non-developmental government or commercial off-the-shelf or developmental items. MCRCO utilizes collected data to generate a Capability Assessment Report (CAR), requirement, and acquisition recommendation for decision by the General Officer Board of Directors (GOBOD).

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	7.107	4.558	9.049	-	9.049
Current President's Budget	6.986	4.558	3.664	-	3.664
Total Adjustments	-0.121	0.000	-5.385	-	-5.385
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.121	0.000			
• Program Adjustments	0.000	0.000	-2.490	-	-2.490
• Rate/Misc Adjustments	0.000	0.000	-2.895	-	-2.895

Change Summary Explanation

The FY 2021 funding request was reduced by \$2.490M to account for the availability of prior year execution balances.

Funding in this line item has been reprioritized while ensuring the Marine Corps continues to evolve toward a Force that is aligned with the National Defense Strategy.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604320M / (U)Rapid Technology Capability Prototype				Project (Number/Name) 0386 / Rapid Prototype Development, Marine Corps			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
0386: <i>Rapid Prototype Development, Marine Corps</i>	6.786	6.986	4.558	3.664	-	3.664	9.203	6.190	6.425	8.045	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Commandant of the Marine Corps (CMC) directed the formation of the Marine Corps Rapid Capabilities Office (MCRCO) to accelerate the identification, development and assessment of capabilities that appear to offer significant military utility. The MCRCO will seek emergent and disruptive technology to rapidly develop and deliver operational prototypes that increase Operating Forces' survivability and lethality, and that will inform requirement development and investment planning. Prototypes to be assessed will be at a Technology Readiness Level 7 or higher and can be either non developmental government off the shelf, non-developmental commercial off the shelf, or developmental items.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Product Development	5.757	3.250	2.310	0.000	2.310
Articles:	-	-	-	-	-
FY 2020 Plans:					
<p>FY20 efforts include Fight the Naval Force Forward, Human Performance Augmentation, and Organic Resource Generation. These efforts are linked to USMC specific warfighting strategies, the National Defense Strategy, the Marine Operating Concept, and the Marine Corps Warfighting Lab Campaign Plan. These policy and strategy linkages insure these efforts will be focused on the proper priorities.</p> <p>- The Fight the Naval Force Forward effort will identify, prototype, and assess systems that provide critical capabilities for small task organized units operating as the forward edge of an inside force. Efforts includes active and passive systems that operate with resilience in a Network-Contested Environment (NCE) and smaller, dispersed, and resilient systems which operate from diverse platforms.</p> <p>- The Human Performance Augmentation effort will identify, prototype, and assess various wearables that enhance physical and or cognitive capabilities of the individual Marine that will increase their combat effectiveness. System efforts include exoskeletons, man-machine, and artificial intelligence interfaces to enhance performance including close combat lethality in complex terrain.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604320M / (U)Rapid Technology Capability Prototype	Project (Number/Name) 0386 / Rapid Prototype Development, Marine Corps

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>FY 2020 Plans: - Continue support efforts to include development of a innovation portal, modeling and simulation, and other data collection efforts.</p> <p>FY 2021 Base Plans: - Continue support efforts to include development of a innovation portal, modeling and simulation, and other data collection efforts.</p> <p>FY 2021 OCO Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: No significant change from FY20 to FY21.</p>					
<p>Title: Test & Evaluation</p> <p align="right">Articles:</p> <p>FY 2020 Plans: FY20 efforts include testing and evaluation of the Fight the Naval Force Forward, Human Performance Augmentation, and Organic Resource Generation efforts which are linked to USMC specific warfighting strategies, the National Defense Strategy, the Marine Operating Concept, and the Marine Corps Warfighting Lab Campaign Plan. These policy and strategy linkages insure these testing and evaluation efforts will be focused on the proper priorities.</p> <p>- The Fight the Naval Force Forward effort will assess systems that provide critical capabilities for small task organized units operating as the forward edge of an inside force. Testing efforts include active and passive systems that operate with resilience in a Network-Contested Environment (NCE) and smaller, dispersed, and resilient systems which operate from diverse platforms.</p> <p>- The Human Performance Augmentation effort will assess various wearables that enhance physical and or cognitive capabilities of the individual Marine that will increase their combat effectiveness. Testing efforts include exoskeletons, man-machine, and artificial intelligence interfaces to enhance performance including close combat lethality in complex terrain.</p>	0.663 -	0.706 -	0.734 -	0.000 -	0.734 -

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604320M / (U)Rapid Technology Capability Prototype	Project (Number/Name) 0386 / Rapid Prototype Development, Marine Corps
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>- The Organic Resource Generation effort will assess personal and small unit systems in optionally mounted configurations that enable creation of various classes of supply to extend operational endurance and reduce logistical reliance. Organic Resource Generation testing efforts include decentralized energy generation, water recycling and desalination, energy storage, increase deployed energy efficiency, bio-fuels, and non-commercially dependent distributed logistics.</p> <p>FY 2021 Base Plans:</p> <p>- Continue testing efforts to include active and passive systems that operate with resilience in a Network-Contested Environment (NCE) and smaller, dispersed, and resilient systems which operate from diverse platforms.</p> <p>- Continue testing efforts to include exoskeletons, man-machine, and artificial intelligence interfaces to enhance performance including close combat lethality in complex terrain.</p> <p>- Continue decentralized energy generation, water recycling and desalination, energy storage, increase deployed energy efficiency, bio-fuels, and non-commercially dependent distributed logistics.</p> <p>FY 2021 OCO Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: No significant change from FY20 to FY21.</p>					
Accomplishments/Planned Programs Subtotals	6.986	4.558	3.664	0.000	3.664

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

Remarks

D. Acquisition Strategy

The MCRCO Process consists of three phases, Identify, Assess, and Inform, each have unique functions in support of the mission. All MCRCO projects will align to this phased approach. In the Identify Phase the MCRCO undertakes a continuous process of investigation and compiling of technologies, concepts, and prototypes for various capability areas. In the Assess Phase, MCRCO will assess performance of prototypes based on military utility, enabling competition, and lifecycle affordability. The Inform Phase provides the results of the assessment event and includes transition to a program office if applicable.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy												Date: February 2020			
Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0604320M / (U)Rapid Technology Capability Prototype				Project (Number/Name) 0386 / Rapid Prototype Development, Marine Corps							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Autonomous Vehicles Development	WR	NSWC : Panama City, FL	0.000	0.250	Aug 2019	0.000		0.000		-		0.000	0.000	0.250	-
Information Warfare Development	WR	NSWC : Crane, IN	0.000	0.250	Jul 2019	0.000		0.000		-		0.000	0.000	0.250	-
Urban Engagement Systems Development	WR	NSWC : Corona, CA	0.000	0.130	May 2019	0.000		0.000		-		0.000	0.000	0.130	-
Autonomous Vehicle Contract Award	C/CPIF	MCSC : Quantico, VA	0.000	2.127	Mar 2019	0.000		0.000		-		0.000	0.000	2.127	-
Information Warfare Contract Award	C/CPIF	MCSC : Quantico, VA	0.000	2.000	Mar 2019	0.000		0.000		-		0.000	0.000	2.000	-
Urban Engagement Systems Contract Award	C/CPIF	MCSC : Quantico, VA	0.000	1.000	Jul 2019	0.000		0.000		-		0.000	0.000	1.000	-
Naval Force Forward	Various	TBD : TBD	0.000	0.000		1.000	May 2020	0.005	Sep 2021	-		0.005	0.000	1.005	-
Human Performance Augmentation	Various	TBD : TBD	0.000	0.000		0.750	May 2020	0.005	Sep 2021	-		0.005	0.000	0.755	-
Organic Resource Generation	Various	TBD : TBD	0.000	0.000		1.500	May 2020	0.005	Sep 2021	-		0.005	0.000	1.505	-
Non-Satellite Terrestrial	Various	TBD : TBD	0.000	0.000		0.000		0.745	Mar 2021	-		0.745	0.000	0.745	-
Micro-Aerial Superiority	Various	MCSC : Quantico, VA	0.000	0.000		0.000		0.825	May 2021	-		0.825	0.000	0.825	-
Multi-Spectral Deception	Various	TBD : TBD	0.000	0.000		0.000		0.725	Apr 2021	-		0.725	0.000	0.725	-
Prior Years Cumulative Funding	Various	Various : Various	1.738	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			1.738	5.757		3.250		2.310		-		2.310	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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 Analysis and program office support	C/FFP	MCSC : Quantico, VA	0.000	0.566	Sep 2019	0.602	Mar 2020	0.620	Mar 2021	-		0.620	0.000	1.788	-

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Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 4				PE 0604320M / (U)Rapid Technology Capability Prototype				0386 / Rapid Prototype Development, Marine Corps							
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Subtotal			0.000	0.566		0.602		0.620		-		0.620	0.000	1.788	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Autonomous Vehicles OPFOR Assessment	MIPR	Yuma Proving Grounds : Yuma, AZ	0.000	0.250	Sep 2019	0.000		0.000		-		0.000	0.000	0.250	-
Information Warfare OPFOR Assessment	MIPR	Electronic Proving Ground (EPG) : Ft Huachuca, AZ	0.000	0.263	Sep 2019	0.000		0.000		-		0.000	0.000	0.263	-
Urban Engagement Systems OPFOR Assessment	MIPR	Muscatatuck : Bulerville, IN	0.000	0.150	Sep 2019	0.000		0.000		-		0.000	0.000	0.150	-
Naval Force Forward	MIPR	Yuma Proving Grounds : Yuma, AZ	0.000	0.000		0.290	Jan 2020	0.300	Mar 2021	-		0.300	0.000	0.590	-
Human Performance Augmentation	MIPR	Human Performance Augmentation : Bulerville, IN	0.000	0.000		0.102	Jan 2020	0.110	Mar 2021	-		0.110	0.000	0.212	-
Organic Resource Generation	C/BA	Electronic Proving Ground (EPG) : Ft Huachuca, AZ	0.000	0.000		0.314	Jan 2020	0.324	May 2021	-		0.324	0.000	0.638	-
Prior Years Cumulative Funding	Various	Various : Various	0.726	0.000		0.000		0.000		-		0.000	0.000	0.726	-
Subtotal			0.726	0.663		0.706		0.734		-		0.734	0.000	2.829	N/A
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	4.322	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

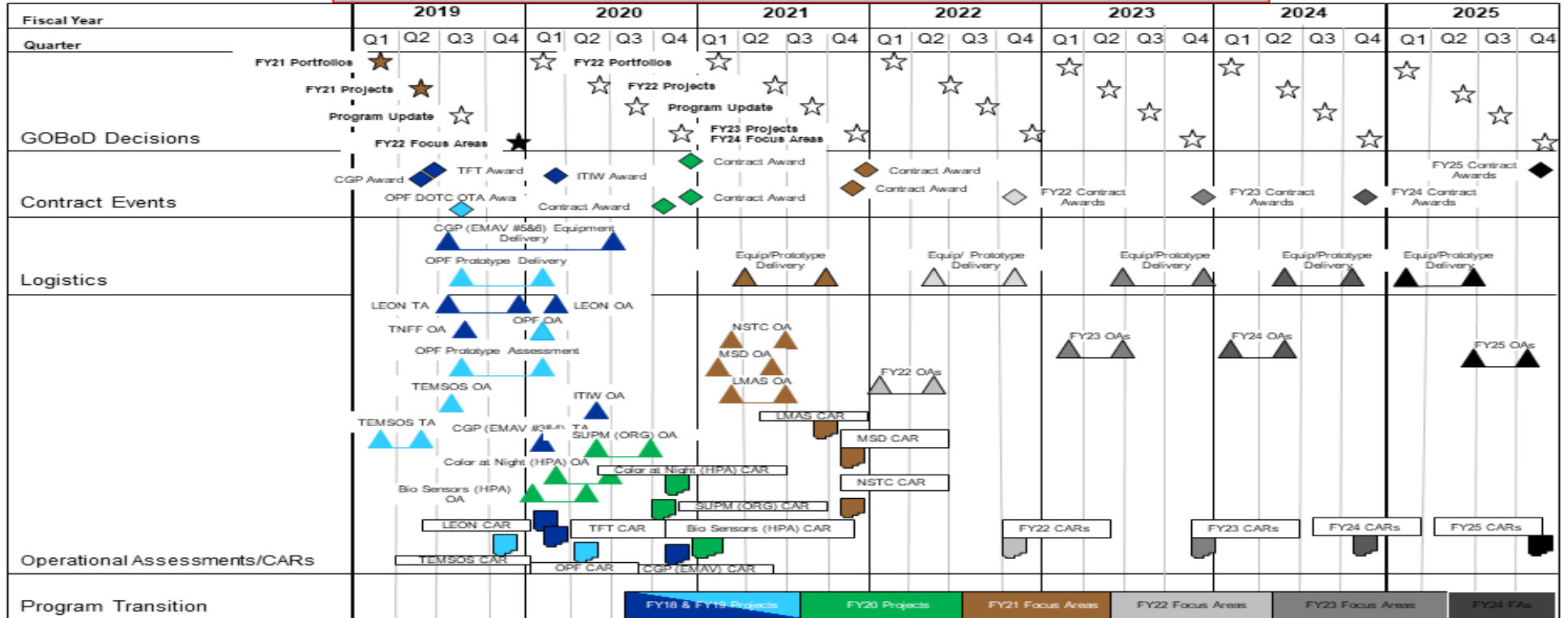
Date: February 2020

Appropriation/Budget Activity
1319 / 4

R-1 Program Element (Number/Name)
PE 0604320M / (U)Rapid Technology
Capability Prototype

Project (Number/Name)
0386 / Rapid Prototype Development,
Marine Corps

MCRCO Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604320M / (U)Rapid Technology Capability Prototype	Project (Number/Name) 0386 / Rapid Prototype Development, Marine Corps

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0386				
FY20 Operations Assessments (OA) (HPA) Bio Sensors	1	2020	2	2020
FY20 OA (HPA) Color At Night	1	2020	3	2020
FY20 OA (ORG) SUPM	2	2020	4	2020
FY20 Capability Assessment Review (CAR) (HPA) Bio Sensors	4	2020	4	2020
FY20 CAR (HPA) Color At Night	4	2020	4	2020
FY20 CAR (ORG) SUPM	4	2020	4	2020
FY20 Contract Award (HPA)	4	2020	4	2020
FY20 Contract Award (ORG)	4	2020	4	2020
FY20 Contract Award (FNFF)	4	2020	4	2020
FY21 OA (MSD)	1	2021	2	2021
FY21 OA (NTSC)	1	2021	3	2021
FY21 OA (LMAS)	1	2021	3	2021
FY21 CAR (LMAS)	3	2021	3	2021
FY21 CAR (MSD)	4	2021	4	2021
FY21 CAR (NTSC)	4	2021	4	2021
FY21 Contract Award (LMAS)	4	2021	4	2021
FY21 Contract Award (NSTC)	4	2021	4	2021