Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy

Date: February 2018

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

1319: Research, Development, Test & Evaluation, Navy I BA 4: Advanced

PE 0604320M / Rapid Technology Capability Prototype

Component Development & Prototypes (ACD&P)

COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	7.055	7.107	-	7.107	7.271	7.423	7.576	7.734	Continuing	Continuing
0386: Rapid Prototype Development, Marine Corps	0.000	0.000	7.055	7.107	-	7.107	7.271	7.423	7.576	7.734	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 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.

FY18 efforts include, but are not limited to, product development and operational forces assessment for Tactical Electro-Magnetic Signature Operations and Support (TEMSOS), Long Range Precision Fires, and Unmanned Swarm Systems. TEMSOS will provide enhanced uninterruptable intra-unit communications, alternate precision navigation, friendly force electromagnetic signature monitoring, enhanced situational awareness, and tactical advantage through electronic attack. Unmanned Swarm Systems provide small armored aerial survey, search, and attack capabilities fused with artificial intelligence to enhance situational awareness and decision making. Long Range Precision Fires will provide long-range guided anti-armor precision fires with both on-board and meshed data links for enhanced targeting accuracy for this small unmanned aircraft munition. These three capabilities have been identified as key immediate Operational Force survivability and lethality enablers to countercurrent enemy capabilities.

FY19 efforts include Autonomous Vehicles, Tactical Information Warfare, and Urban Engagement Systems.

Autonomous Vehicles: This effort will identify, prototype, and assess the use in a variety of combat and supporting use employments, vehicles capable of sensing their environment, while navigating and functioning independently without human conduction to take evasive or defensive action and avoid detection, tracking, targeting or attack, provide an alternative reconnoiter capability in non-permissive settings for the purpose of mapping and patrolling for the purpose of intensifying combat power and reducing risk to the force.

Tactical Information Warfare: This effort will identify, prototype, and assess various informations systems that provide small unit ability to undermine local opposing force information quality, while ensuring friendly forces a timely, accurate, superior capability to automatically correlate relevant active and passive information from organic and non-organic sensors that will increase their combat effectiveness in this emerging warfighting discipline.

Urban Engagement Systems: This effort will identify, prototype and assess small unit systems to provide them enhanced situational awareness to locate and track opposing forces in tall buildings, narrow alleys, sewage tunnels and subway systems in order to minimize friendly force exposure, reduce potential collateral damage, and offer increased force protection measures by means of amplified lethality, improved discrimination ability, and enhances survivability.

PE 0604320M: Rapid Technology Capability Prototype Navy

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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy

Appropriation/Budget Activity

1319: Research, Development, Test & Evaluation, Navy I BA 4: Advanced Component Development & Prototypes (ACD&P)

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

B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	0.000	7.055	7.196	-	7.196
Current President's Budget	0.000	7.055	7.107	-	7.107
Total Adjustments	0.000	0.000	-0.089	-	-0.089
 Congressional General Reductions 	-	-			
 Congressional Directed Reductions 	-	-			
 Congressional Rescissions 	-	-			
 Congressional Adds 	-	-			
 Congressional Directed Transfers 	-	-			
 Reprogrammings 	-	-			
SBIR/STTR Transfer	-	-			
 Rate/Misc Adjustments 	0.000	0.000	-0.089	-	-0.089

Exhibit R-2A, RDT&E Project J	ustification:	PB 2019 N	lavy							Date: Febr	ruary 2018	
Appropriation/Budget Activity 1319 / 4								umber/Name) id Prototype Development, ps				
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
0386: Rapid Prototype Development, Marine Corps	0.000	0.000	7.055	7.107	-	7.107	7.271	7.423	7.576	7.734	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.

MCRCO is not an acquisition program. MCRCO implements one-time buys of various capabilities for operational assessments and does not sustain nor provide enduring support beyond the operational assessment period. If a capability requires sustainment and enduring support it will transition to the traditional acquisition process.

FY19 efforts include Autonomous Vehicles, Tactical Information Warfare, and Urban Engagement Systems.

Autonomous Vehicles: effort will identify, prototype, and assess the use in a variety of combat and supporting use employments, vehicles capable of sensing their environment, while navigating and functioning independently without human conduction to take evasive or defensive action and avoid detection, tracking, targeting or attack, provide an alternative reconnoiter capability in non-permissive settings for the purpose of mapping and patrolling for the purpose of intensifying combat power and reducing risk to the force.

Tactical Information Warfare: effort will identify, prototype, and assess various information systems that provide small unit ability to undermine local opposing force information quality, while ensuring friendly forces a timely, accurate, superior capability to automatically correlate relevant active and passive information from organic and non-organic sensors that will increase their combat effectiveness in this emerging war-fighting discipline.

Urban Engagement Systems: effort will identify, prototype and assess small unit systems to provide them enhanced situational awareness to locate and track opposing forces in tall buildings, narrow alleys, sewage tunnels and subway systems in order to minimize friendly force exposure, reduce potential collateral damage, and offer increased force protection measures by means of amplified lethality, improved discrimination ability, and enhances survivability.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Product Development	0.000	5.630	5.878	0.000	5.878

PE 0604320M: Rapid Technology Capability Prototype

Navy

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy				Date: Febi	ruary 2018		
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/l PE 0604320M / Rapid Technology Capability Prototype			(Number/Name) Papid Prototype Development, Corps			
B. Accomplishments/Planned Programs (\$ in Millions, Article Qu	antities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	
FY 2018 Plans: Initiate Certifications/Studies/Reports and Prototype Purchase/Deve-Initiate product development of Tactical Electro-Magnetic Spectrum Initiate product development of unmanned aerial, surface, and underswarm capability. Initiate product development of a Long Range Precision Fires capable FY 2019 Base Plans: FY19 Product Development Autonomous Vehicles: Initiate efforts to it in a variety of combat and supporting use employments, vehicles capable avoid detection, tracking, targeting or attack, provide an alternative resettings for the purpose of mapping and patrolling for the purpose of to the force. FY19 Product Development Tactical Information Warfare: Initiate efforts are various information systems that provide small unit ability to underming while ensuring friendly forces a timely, accurate, superior capability to passive information from organic and non-organic sensors that will in emerging war-fighting discipline. FY19 Product Development Urban Engagement Systems: Initiate efforts small unit systems to provide them enhanced situational awareness to buildings, narrow alleys, sewage tunnels and subway systems in ordereduce potential collateral damage, and offer increased force protectile lethality, improved discrimination ability, and enhances survivability. FY 2019 OCO Plans: N/A FY 2018 to FY 2019 Increase/Decrease Statement:	capabilities. erwater vehicles (UAV, USV, and UUV) polity. dentify, prototype, and assess the use pable of sensing their environment, while to take evasive or defensive action and econnoiter capability in non-permissive intensifying combat power and reducing risk orts to identify, prototype, and assess the local opposing force information quality, or automatically correlate relevant active and crease their combat effectiveness in this erts to identify, prototype and assess to locate and track opposing forces in tall their to minimize friendly force exposure,	-	-	-			

PE 0604320M: Rapid Technology Capability Prototype

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy				Date: Febr	uary 2018	
1319 / 4 PE 06	rogram Element (Number/ 604320M / Rapid Technology bility Prototype		• '	Number/Name) apid Prototype Development, orps		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each	<u>)</u>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Net increase of \$0.248M reflects a slightly higher product development emphasis from Rapid Prototype Development efforts.	n FY18 to FY19 within					
Title: Support	Articles:	0.000	1.050 -	0.566 -	0.000	0.566
FY 2018 Plans: - Initiate Operational Force Assessments of MCRCO portfolio: - Initiate support of Tactical Electro-Magnetic Spectrum capabilities. - Initiate support of unmanned aerial, surface, and underwater vehicles (UAV, USV, a - Initiate support development and operational assessment of a Long Range Precision						
FY 2019 Base Plans: FY19 Initiate support efforts to include development of a innovation portal and other d	ata collection efforts.					
FY 2019 OCO Plans: N/A						
FY 2018 to FY 2019 Increase/Decrease Statement: The decrease of \$0.484M reflects a reduction in overall Rapid Prototype Development to FY19.	t support costs from FY18					
Title: Management	Articles:	0.000	0.375	0.000	0.000	0.000
FY 2018 Plans: - Initiate Management Services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the services of the new-start MCRCO: Engineering Analysis and preserved by the services of the serv	program office support					
N/A						
FY 2019 OCO Plans: N/A						
FY 2018 to FY 2019 Increase/Decrease Statement: The decrease of \$0.375M reflects a reduction in overall Rapid Prototype Developmen FY18 to FY19.	t management costs from					
Title: Test & Evaluation		0.000	0.000	0.663	0.000	0.663

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PE 0604320M: Rapid Technology Capability Prototype Navy

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy				Date: Febr	uary 2018		
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/I PE 0604320M / Rapid Technology Capability Prototype			• •	ame) ype Development,		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quanti	ties in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	
	Articles:	-	-	-	-	-	
FY 2018 Plans: N/A							
FY 2019 Base Plans: FY19 Autonomous Vehicles: Initiate efforts to test and evaluate prototype combat and supporting use employments. Vehicles tested will be capable navigating and functioning independently without human conduction, taking detection, tracking, targeting, attacking, provide an alternative reconnoiter for the purpose of mapping and patrolling for the purpose of intensifying c is to reduce risk to the force.	e of sensing their environment, while ng evasive or defensive action, avoiding capability in non-permissive settings						
FY19 Operations Forces (OPFOR) Assessment Information Warfare: Init prototypes to assess various information systems that provide small unit a force information quality, while ensuring friendly forces a timely, accurate, correlate relevant active and passive information from organic and non-or	ability to undermine local opposing superior capability to automatically						
FY19 Operations Forces (OPFOR) Assessment Urban Engagement Syst prototypes to assess a state of the art urban range with appropriate buildi an urban environment. Systems must locate and track opposing forces in tunnels and subway systems in order to minimize friendly force exposure, and offer increased force protection.	ngs and streets that properly reflect tall buildings, narrow alleys, sewage						
FY 2019 OCO Plans: N/A							
FY 2018 to FY 2019 Increase/Decrease Statement: The increase of \$0.663M from FY18 to FY19 reflects Test and Evaluation Prototype Development efforts.	costs in support of FY19 Rapid						
Accomplis	hments/Planned Programs Subtotals	0.000	7.055	7.107	0.000	7.10	

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

N/A

PE 0604320M: Rapid Technology Capability Prototype Navy

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (N	umber/Name)
1319 / 4	PE 0604320M I Rapid Technology	0386 <i>I Rap</i>	id Prototype Development,
	Capability Prototype	Marine Cor	ps

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

Remarks

D. Acquisition Strategy

The MCRCO Process consists of three phases, Identify, Assess, and Inform, where each have unique function 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. Activities in this phase include but are not limited to research, war gaming/lectures/and external experiment attendance, industry and FFRDC engagements, Innovation Portal Challenges and Forums, gap identification, and emerging technology analysis. This is also where the MCRCO portfolio of projects are determined and approved for execution.

In the Assess Phase the operational assessments are performed by the MCRCO. These assessments of capability prototypes are categorized by complexity of effort and the perceived time it will take to conduct the assessment. The Capability Assessment Categories (CAC) are:

- CAC 1 Non Developmental Capability Prototype Plug and Play (1-90 days)
- CAC 2 Integration Capability Prototype -Reconfigure and Play (91-180 days)
- CAC 3 Developmental Capability Prototype Develop and Play (181-360 days)

The assess phase has three utility focuses that prototypes must demonstrate prior to being assessed: Military Utility, Enabling Competition, and Lifecycle Affordability. The Inform Phase not only provides the results of the assessment event, but it also tracks the performance of the acquisition process. The goal is to deliver the capability rapidly to support warfighter requirements. It focuses its efforts on measuring the time it takes for key acquisition events to occur. These events include but are not limited to requirements transition, contract award, production, test, and fielding. Other Measure of Effectiveness will focus on costs and rework associated with acquisition process.

E. Performance Metrics

There will be 33% and 66% assessment reviews, where assessments will either continue forward to completion or project ended. All reviews will be documented in the Capability Assessment Report.

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Date: February 2018 Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy

Appropriation/Budget Activity R-1 Program Element (Number/Name) Project (Number/Name)

1319 / 4 PE 0604320M / Rapid Technology 0386 I Rapid Prototype Development,

Capability Prototype Marine Corps

Product Developme	nt (\$ in M	illions)		FY 2	017	FY 2	2018	FY 2 Ba	2019 ise		2019 CO	FY 2019 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	Total Cost	Target Value of Contract
Certifications, Studies, Reports_Tactical EM	Various	Not Specified : Not Specified	0.000	0.000		0.500	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Certifications, Studies, Reports_Swarm	Various	Not Specified : Not Specified	0.000	0.000		0.500	Nov 2017	0.000		-		0.000	0.000	0.500	-
Certifications, Studies, Reports_Fires	Various	Not Specified : Not Specified	0.000	0.000		0.130	Jan 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Prototype Purchase, Development, and Integration_Tactical EM	Various	Not Specified : Not Specified	0.000	0.000		1.750	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Prototype Purchase, Development, and Integration_Swarm	Various	Not Specified : Not Specified	0.000	0.000		1.750	Nov 2017	0.000		-		0.000	0.000	1.750	-
Prototype Purchase, Development, and Integration_Fires	Various	Not Specified : Not Specified	0.000	0.000		1.000	Jan 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Autonomous Vehicles Development	TBD	NSWC : Panama City, FL	0.000	0.000		0.000		0.250	Dec 2018	-		0.250	0.000	0.250	-
Information Warfare Development	TBD	NSWC : Crane, IN	0.000	0.000		0.000		0.250	Dec 2018	-		0.250	0.000	0.250	-
Urban Engagement Systems Development	TBD	NSWC : Corona, CA	0.000	0.000		0.000		0.130	Dec 2018	-		0.130	0.000	0.130	-
Autonomous Vehicle Contract Award	TBD	MCSC : Quantico, VA	0.000	0.000		0.000		2.248	Feb 2019	-		2.248	0.000	2.248	-
Informaion Warfare Contract Award	TBD	MCSC : Quantico, VA	0.000	0.000		0.000		2.000	Feb 2019	-		2.000	0.000	2.000	-
Urban Engagement Systems Contract Award	TBD	MCSC : Quantico, VA	0.000	0.000		0.000		1.000	Feb 2019	-		1.000	0.000	1.000	-
		Subtotal	0.000	0.000		5.630		5.878		-		5.878	Continuing	Continuing	N/A

Remarks

FY19 Product Development Autonomous Vehicles: effort will identify, prototype, and assess the use in a variety of combat and supporting use employments, vehicles capable of sensing their environment, while navigating and functioning independently without human conduction to take evasive or defensive action and avoid detection, tracking, targeting

PE 0604320M: Rapid Technology Capability Prototype Navy

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy Date: February 2018

Appropriation/Budget Activity R-1 Program Element (Number/Name) Project (Number/Name)

PE 0604320M / Rapid Technology 1319 / 4 Capability Prototype

0386 I Rapid Prototype Development,

Marine Corps

Product Development (\$ in Mil	llions)		FY 2	2017	FY 2	2018	_	2019 ise		2019 CO	FY 2019 Total			
Contract Method Cost Category Item & 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

or attack, provide an alternative reconnoiter capability in non-permissive settings for the purpose of mapping and patrolling for the purpose of intensifying combat power and reducing risk to the force.

FY19 Product Development Tactical Information Warfare: effort will identify, prototype, and assess various informations systems that provide small unit ability to undermine local opposing force information quality, while ensuring friendly forces a timely, accurate, superior capability to automatically correlate relevant active and passive information from organic and non-organic sensors that will increase their combat effectiveness in this emerging warfighting discipline.

FY19 Product Development Urban Engagement Systems; efforts will identify, prototype and assess small unit systems to provide them enhanced situational awareness to locate and track opposing forces in tall buildings, narrow alleys, sewage tunnels and subway systems in order to minimize friendly force exposure, reduce potential collateral damage, and offer increased force protection measures by means of amplified lethality, improved discrimination ability, and enhances survivability.

Support (\$ in Million	Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO				
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	Total Cost	Target Value of Contract
Tactical EM	Various	Not Specified : Not Specified	0.000	0.000		0.425	Jan 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Swarm	Various	Not Specified : Not Specified	0.000	0.000		0.425	Jan 2018	0.000		-		0.000	0.000	0.425	-
Fires	Various	Not Specified : Not Specified	0.000	0.000		0.200	Apr 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Engineering Analysis and program office support	C/FFP	MCSC : Quantico, VA	0.000	0.000		0.000		0.566	Mar 2019	-		0.566	0.000	0.566	-
		Subtotal	0.000	0.000		1.050		0.566		-		0.566	Continuing	Continuing	N/A

Test and Evaluation	(\$ in Milli	ons)		FY 2	2017	FY 2	2018	FY 2	2019 Ise	FY 2		FY 2019 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	TBD	Yuma Proving Grounds : Yuma, AZ	0.000	0.000		0.000		0.250	Mar 2019	-		0.250	0.000	0.250	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy

Appropriation/Budget Activity R-1 Program Element (Number/Name) Project (Number/Name)

PE 0604320M / Rapid Technology 0386 / Rapid Prototype Development,

Capability Prototype Marine Corps

Test and Evaluation (\$ in Millions)		FY 2017 FY 20		2018 FY 2		2019 ise	FY 2019 OCO		FY 2019 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
Information Warfare OPFOR Assessment	TBD	Electronic Proving Ground (EPG) : Ft Huachuca, AZ	0.000	0.000		0.000		0.263	Mar 2019	-		0.263	0.000	0.263	-
Urban Engagement Systems OPFOR Assessment	C/BA	Muscatatuck : Bulerville, IN	0.000	0.000		0.000		0.150	Mar 2019	-		0.150	0.000	0.150	-
		Subtotal	0.000	0.000		0.000		0.663		-		0.663	0.000	0.663	N/A

Remarks

FY19 Operations Forces (OPFOR) Assessment Autonomous Vehicles: effort test prototypes, and assess the use in a variety of combat and supporting use employments, vehicles capable of sensing their environment, while navigating and functioning independently without human conduction to take evasive or defensive action and avoid detection, tracking, targeting or attack, provide an alternative reconnoiter capability in non-permissive settings for the purpose of mapping and patrolling for the purpose of intensifying combat power and reducing risk to the force.

FY19 OPFOR Assessment Information Warfare: effort will test prototypes, and assess various information systems that provide small unit ability to undermine local opposing force information quality, while ensuring friendly forces a timely, accurate, superior capability to automatically correlate relevant active and passive information from organic and non-organic sensors.

FY19 OPFOR Assessment Urban Engagement Systems; efforts will test prototypes on a state of the art urban range with appropriate buildings and streets that properly reflect an urban environment. Systems must locate and track opposing forces in tall buildings, narrow alleys, sewage tunnels and subway systems in order to minimize friendly force exposure, reduce potential collateral damage, and offer increased force protection.

Management Services (\$ in Millions)				FY 2	FY 2017 FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	Total Cost	Target Value of Contract
Engineering Analysis Services	WR	NSWC Crane : Crane, IN	0.000	0.000		0.150	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Program office support	TBD	TBD : Not Specified	0.000	0.000		0.225	Dec 2017	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.375		0.000		-		0.000	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2	019 Navy	,							Date:	February	2018		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604320M <i>I Rapid Technology</i> Capability Prototype					Project (Number/Name) 0386 I Rapid Prototype Development, Marine Corps			
	Prior Years	FY 2	017	FY 2	018	FY 2019 Base	FY 2		FY 2019 Total	Cost To	Total Cost	Target Value of Contract	
Project Cost Totals	0.000	0.000		7.055		7.107	-		7.107	Continuing	Continuing	N/A	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy Date: February 2018 **Appropriation/Budget Activity** R-1 Program Element (Number/Name) Project (Number/Name) PE 0604320M / Rapid Technology 1319 / 4 0386 I Rapid Prototype Development, Capability Prototype Marine Corps RAPID PROTOTYPE DEVELOPMENT, MARINE CORPS (Marine Corps Rapid Capabilities Office) Program Schedule Fiscal Year FY 17 FY 18 FY 19 FY 20 FY 21 FY 22 Q3 Q4 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Quarter GOBoD GOBoD GOBoD GOBoD GOBoD GOBoD Milestone Events FY19 INITIAL TASKINGS **FY21 INITIAL TASKINGS FY23 INITIAL TASKINGS** Capabilities / Requirements FY18 INITIAL TASKINGS FY20 INITIAL TASKINGS Y 22 INITIAL TASKINGS Logistics DELIVERY DELIVERY DELIVERY DELIVERY DELIVERY DELIVERY Major AWARD AWARD AWARD AWARD AWARD Contract AWARD Events Test & Evaluation ASSESSMENTS FY 19 PROJECT'S 'ACRONYMS FY 18 PROJECTS FY 20 - 23 PROJECTS CAR - Capability Assessment Report Tactical EMS Operations Autonomous Vehicles GOBoD Debision Documentation GOBoD - General Officer Board of Directors Autonomous Unmanned Swarming Tactical Information Warfare Contract Key Event Action EMS - Electromagnetic Spectrum Long-Range Precision Fires Urban Engagement Systems

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604320M / Rapid Technology Capability Prototype	- , (umber/Name) pid Prototype Development, rps

Schedule Details

	St	art	Er	nd
Events by Sub Project	Quarter	Year	Quarter	Year
Proj 0386				
Contract Award	2	2019	2	2019
Prototype Deliveries	2	2019	4	2019
Operations Forces (OPFOR) Assessments	2	2019	1	2020