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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy **Date:** May 2021

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0306250M / <i>Cyber Operations Technology Development</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	9.506	19.109	25.098	26.318	-	26.318	-	-	-	-	-	-
2958: <i>Cyberspace Activities</i>	9.506	19.109	25.098	26.318	-	26.318	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

MARFORCYBER provides advanced cyber warfare capabilities in direct support of US Cyber Command (USCYBERCOM), Marine Corps Commanders, and national agencies to enable and accomplish global operations. Activities within the project deliver cyberspace superiority capabilities through the research, development, testing, evaluation, and integration of cyber technologies. The project enables Commanders to disrupt, deny, degrade, or destroy targets. Research and develop software constructed cyber weapons disrupt rising advanced peer and near-peer threats, as well as violent extremist organizations seeking to do harm to the United States. The software constructed cyber weapons are target specific and require high quality, rapid adjustments to achieve desired effects at acceptable levels of risk. The specific details and aspects of these cyber activities are held at a higher classification level.

Adversarial Cyber Developmental Test and Evaluation: Provides adversarial penetration testing services to Marine Corps Systems Command (MCSC) programs of record (PoRs) via Marine Corps Tactical Systems Support Activity (MCTSSA). MCTSSA serves as the Marine Corps Enterprise Network (MCEN) Cyber Developmental Test and Evaluation (DT&E) agent in accordance with NDAA 1640, PL-113 -283, DODI 8510. 01, DODI 5000.2, CNSS-1253, NIST-SP-800-53, and the DoD Cyber Security Test and Evaluation Guidebook. MCTSSA also serves as the USMC Cyber Developmental Test (DT) Center of Excellence, conducting mission-based cyber vulnerability assessments in accordance with policy-directed taskings. Assessments include, but are not limited to, (1) zero-day discoveries, (2) target maintenance resources to prove vulnerabilities vs. false positives, (3) informing Operational Commanders and Enterprise Leadership of mission critical Cyber security issues, (3) informing prioritization of cyber security threat investment decisions, (4) informing USMC DCO staff on advanced cyber threats to increase their skill set in detecting advanced cyber attacks and threats, and (5) ensuring Command & Control (C2) enhances the resiliency of the Marine Air-Ground Task Force (MAGTF) in a cyber-denied environment.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	19.874	26.173	31.972	-	31.972
Current President's Budget	19.109	25.098	26.318	-	26.318
Total Adjustments	-0.765	-1.075	-5.654	-	-5.654
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.075			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.765	0.000			
• Program Adjustments	0.000	0.000	-5.500	-	-5.500

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• Rate/Misc Adjustments	0.000	0.000	-0.154	-	-0.154
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Change Summary Explanation

The increase of \$1.220M from FY 2021 to FY 2022 is primarily attributed to the enhancement of cyber weapons systems used in an ever-changing operational environment. Funds will enable the modification of cyber weapons to increase effectiveness above the current state and create additional capabilities to increase the inventory of cyber weapons available for use against specific targets. Additionally, funding also enables adversarial cyber developmental test services in support of Marine Corps Systems Command's (MCSC) Command, Control, Communications, Computers, and Intelligence (C4I) programs of record.

The FY 2022 funding request was reduced by \$5.500 million to account for the availability of prior year execution balances.

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Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0306250M / <i>Cyber Operations Technology Development</i>				Project (Number/Name) 2958 / <i>Cyberspace Activities</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
2958: <i>Cyberspace Activities</i>	9.506	19.109	25.098	26.318	-	26.318	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MARFORCYBER: Provides highly skilled contractors who develop cyber weapons that disrupt rising and near-peer threats, as well as violent extremist organizations seeking to do harm to the United States. The software constructed cyber weapons support operations in the Central Command area of responsibility. In addition, these software constructed cyber weapons directly support Special Operations Command, Marine Cyber Mission Forces, and Cyber Command in global operations. The software constructed cyber weapons are target specific and require high quality, rapid adjustments to achieve desired effects at acceptable levels of risk.

Adversarial Cyber Developmental Test and Evaluation: Provides adversarial penetration testing services to Marine Corps Systems Command (MCSC) programs of record (PoRs) via Marine Corps Tactical Systems Support Activity (MCTSSA). MCTSSA serves as the Marine Corps Enterprise Network (MCEN) Cyber Developmental Test and Evaluation (DT&E) agent in accordance with NDAA 1640, PL-113 -283, DODI 8510. 01, DODI 5000.2, CNSS-1253, NIST-SP-800-53, and the DoD Cyber Security Test and Evaluation Guidebook. MCTSSA also serves as the USMC Cyber Developmental Test (DT) Center of Excellence, conducting mission-based cyber vulnerability assessments in accordance with policy-directed taskings. Assessments include, but are not limited to, (1) zero-day discoveries, (2) target maintenance resources to prove vulnerabilities vs. false positives, (3) informing Operational Commanders and Enterprise Leadership of mission critical Cyber security issues, (3) informing prioritization of cyber security threat investment decisions, (4) informing USMC DCO staff on advanced cyber threats to increase their skill set in detecting advanced cyber attacks and threats, and (5) ensuring Command & Control (C2) enhances the resiliency of the Marine Air-Ground Task Force (MAGTF) in a cyber-denied environment.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Combat Support Team	6.043	5.236	5.914	0.000	5.914
Articles:	-	-	-	-	-
Description: Combat Support Team supports existing cyber mission teams with cyber weapons developers.					
FY 2021 Plans: FY 2021 funding will enable combat support personnel to develop prototypes for testing new cyber weapons to outpace modernized defenses used by peer adversaries and enhance the lethality and relevance of software constructed cyber weapons that disrupt near peer, violent extremist organizations, and adversaries to the United States. Efforts are required because software constructed cyberspace weapons degrade in operational efficacy once a weapon is used. Its efficacy deteriorates as adversaries learn how to mitigate the weapon's effects.					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>The specific details and aspects of these cyberspace activities are held at a higher classification level.</p> <p>FY 2022 Base Plans: FY 2022 funding will continue to enable cyber support teams (CST), which are manned with highly skilled software engineers, exploit developers, integrators, testers, evaluators and systems that support weapon creation. The engineers are highly skilled contractors who are software developers with a 12-month period of performance, associated to a standard twenty-six (26) pay period burn rate for services rendered. The CSTs will continue to develop prototypes for testing new cyber weapons to outpace modernized defenses used by peer adversaries and enhance the lethality and relevance of software constructed cyber weapons that disrupt near peer, violent extremist organizations, and adversaries to the United States. Efforts are required because software constructed cyberspace weapons degrade in operational efficacy once a weapon is used. Its efficacy deteriorates as adversaries learn how to mitigate the weapon's effects.</p> <p>The specific details and aspects of these cyberspace activities are held at a higher classification level.</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: The increase of \$0.678M supports inflation costs for highly skilled software engineers.</p>					
<p>Title: Joint Cyberspace Weapons</p> <p align="right">Articles:</p> <p>Description: Develop new and specialized cyber weapons targeted at advanced threats in cyberspace.</p> <p>FY 2021 Plans: Develop new and specialized cyber weapons targeted at near peer and advanced threats in cyberspace. FY 2019/FY 2020 research and development efforts led to the development of a plethora of cyber weapons. FY 2021 will see test and evaluation activities on the cyber weapons backlog increase in order to make weapons available to the Joint Force. Building on FY 2019/FY 2020 development efforts, in FY 2021, MARFORCYBER will increase the currency, relevancy, and availability of cyber weapons by reducing the backlog through continued process development. Further refinement of the intelligence cycle and its development to decipher actionable targets, increase overall speed and efficiency, and decrease overall concept-to-delivery timelines, also based on FY 2019/FY 2020 efforts, will continue in FY 2021.</p>	13.066	17.462	17.966	0.000	17.966
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>The specific details and aspects of these cyberspace activities are held at a higher classification level.</p> <p>FY 2022 Base Plans: FY 2022 funding will continue to enable the creation and development of enhanced cyber weapons systems; which are developed by highly skilled contractors who are software developers with a 12-month period of performance, associated to a standard twenty-six (26) pay period burn rate for services rendered. Funding will increase effectiveness above the current state and create additional capabilities to increase the inventory of cyber weapons available for use against specific targets. FY 2022 funding will continue efforts to reduce cyber weapon backlogs by facilitating quicker processing of cyber tools and delivery to operational forces while following appropriate orders and guidelines.</p> <p>The specific details and aspects of these cyberspace activities are held at a higher classification level.</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: The increase of \$0.504M supports inflation costs for the joint cyberspace weapons program.</p>					
<p>Title: Cybersecurity Engineering Analysis</p> <p align="right">Articles:</p>	0.000	2.400	2.438	0.000	2.438
<p>FY 2021 Plans: FY 2021 funding will initiate adversarial cyber developmental testing in support of Marine Corps Systems Command's (MCSC) Command, Control, Communications, Computers, and Intelligence (C4I) programs of record (PoR).</p> <p>FY 2022 Base Plans: FY 2022 funding will support adversarial cyber developmental testing in support of Marine Corps Systems Command's (MCSC) Command, Control, Communications, Computers, and Intelligence (C4I) programs of record (PoR).</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p>	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Increase of \$0.038M from FY 2021 to FY 2022 supports inflation cost for Cybersecurity Engineering Analysis.					
Accomplishments/Planned Programs Subtotals	19.109	25.098	26.318	0.000	26.318

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/4645: MARFORCYBER	27.632	43.985	25.377	-	25.377	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

MARFORCYBER: The contract period of performance will be 12 months, associated to a standard twenty-six (26) pay period burn rate for services rendered with options into future fiscal years. The contract place of performance will be located at Fort Meade, Maryland. The contracting authority will be Naval Information Warfare Center (NIWC) Pacific and Air Force Research Laboratory (AFRL).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy **Date:** May 2021

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Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combat Support Team	Various	MARFORCYBER : Fort Meade, MD	9.506	6.043	Mar 2020	5.236	Mar 2021	5.914	Jan 2022	-		5.914	-	-	-
Subtotal			9.506	6.043		5.236		5.914		-		5.914	-	-	N/A

Remarks
 Cyber Support Team: Increase of \$0.678M from FY 2021 to FY 2022 supports inflation costs for the joint cyberspace weapons program; which funds highly skilled contractors who are software developers with a 12-month period of performance starting in March, associated to a standard twenty-six (26) pay period burn rate for services rendered.

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cybersecurity Engineering Analysis	Various	Various : Various	0.000	0.000		2.400	Mar 2021	2.438	Mar 2022	-		2.438	-	-	-
Joint Cyberspace Weapons Enhancements	Various	MARFORCYBER : Fort Meade, MD	0.000	13.066	May 2020	17.462	Jan 2021	17.966	Jan 2022	-		17.966	-	-	-
Subtotal			0.000	13.066		19.862		20.404		-		20.404	-	-	N/A

Remarks
 CEA - Increase of \$0.038M from FY 2021 to FY 2022 provides for adversarial cyber developmental testing in support of Marine Corps Systems Command's (MCSC) Command, Control, Communications, Computers, and Intelligence (C4I) programs of record (PoR). FY 2022 continues adversarial cyber developmental testing activities. Funding provides for equipment and R&D activities, which may include contractor and/or organic support.

JCW - Increase of \$0.504M from FY 2021 to FY 2022 supports the creation and enhancement of cyber weapons systems used in an ever-changing operational environment; which are developed by highly skilled contractors who are software developers with a 12-month period of performance, associated to a standard twenty-six (26) pay period burn rate for services rendered. Funding enable the modification of cyber weapons to increase effectiveness above the current state and create additional capabilities to increase the inventory of cyber weapons available for use against specific targets. FY 2022 funding will continue efforts to reduce cyber weapon backlogs by facilitating quicker processing of cyber tools and delivery to operational forces while following appropriate orders and guidelines.

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.506	19.109	25.098	26.318	-	26.318	-	-	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy **Date:** May 2021

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Proj 2958	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	Combat Support Team																											
	Joint Cyberspace Weapons Enhancements																											
	Cybersecurity Engineering Analysis																											
	Empty grid for data entry																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2958				
Combat Support Team	2	2020	4	2022
Joint Cyberspace Weapons Enhancements	3	2020	4	2022
Cybersecurity Engineering Analysis	2	2021	4	2022