

UNCLASSIFIED

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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>					R-1 Program Element (Number/Name) PE 0604636N / <i>Counter Unmanned Aircraft System (C-UAS)</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	0.000	0.000	3.100	14.259	-	14.259	5.610	6.064	5.957	6.076	Continuing	Continuing
3241: <i>Counter Unmanned Aircraft Systems (C-UAS)</i>	0.000	0.000	3.100	14.259	-	14.259	5.610	6.064	5.957	6.076	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Counter Unmanned Aircraft System (C-UAS) program was initiated in response to Joint Urgent Operational Need Statement CC-0558 and Joint Emergent Operational Need Statement ST-0008. The program originated as a Rapid Deployment Capability (RDC) to employ integrated C-UAS solution sets designed to protect high value or critical Naval assets, and support public safety against threats posed by the inadvertent or unlawful misuse of unmanned aircraft systems (UAS). The C-UAS program provides an integrated Family of Systems (FoS) employing advanced target discrimination and defeat capabilities to meet fleet requirements. More details available at a higher classification level.

A deployed C-UAS capability improves defenses against the rapidly evolving capabilities of remote and autonomously controlled devices. With UAS becoming more readily available, affordable and capable, the threat of inadvertent or unlawful flight over restricted spaces multiplies exponentially, raising concern that these UAS may be used as tools for surveillance, espionage or hostile actions at critical Navy Installations.

FY21 funding is requested to manage, evaluate, verify and implement system assessments, strategies, improvements, program management, and systems engineering support. Funding provides for refinement of material and non-material solutions, threat assessments, identification and development of advanced target discrimination, and defeat capabilities for integration into the C-UAS FoS. Funding also provides for continued development of common Command and Control (C2) and data fusion architecture for C-UAS FoS.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	5.500	5.610	-	5.610
Current President's Budget	0.000	3.100	14.259	-	14.259
Total Adjustments	0.000	-2.400	8.649	-	8.649
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.400			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	8.638	-	8.638
• Rate/Misc Adjustments	0.000	0.000	0.011	-	0.011

UNCLASSIFIED

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

Appropriation/Budget Activity
1319: *Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)*

R-1 Program Element (Number/Name)
PE 0604636N / *Counter Unmanned Aircraft System (C-UAS)*

Change Summary Explanation

FY20 Congressional adjustment for system development duplication. FY21 funding increase by \$8.649 in support of universal C2 Joint Capability Technology Demonstration(JCTD).

UNCLASSIFIED

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 0604636N / <i>Counter Unmanned Aircraft System (C-UAS)</i>			Project (Number/Name) 3241 / <i>Counter Unmanned Aircraft Systems (C-UAS)</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
3241: <i>Counter Unmanned Aircraft Systems (C-UAS)</i>	0.000	0.000	3.100	14.259	-	14.259	5.610	6.064	5.957	6.076	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Counter Unmanned Aircraft System (C-UAS) program was initiated in response to Joint Urgent Operational Need Statement CC-0558 and Joint Emergent Operational Need Statement ST-0008. The program originated as a Rapid Deployment Capability (RDC) to employ integrated C-UAS solution sets designed to protect high value or critical Naval assets, and support public safety against threats posed by the inadvertent or unlawful misuse of unmanned aircraft systems (UAS). The C-UAS program provides an integrated Family of Systems (FoS) employing advanced target discrimination and defeat capabilities to meet fleet requirements. More details available at a higher classification level.

FY21 funding is requested to manage, evaluate, verify and implement system assessments, strategies, improvements, program management, and systems engineering support. Funding provides for refinement of material and non-material solutions, threat assessments, and identification or development of advanced target discrimination and defeat capabilities for integration into the C-UAS FoS. Funding provides for continued development of common Command and Control (C2) and data fusion architecture for C-UAS FoS.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: C-UAS System Development and Integration	0.000	3.100	14.259	0.000	14.259
Articles:	-	-	-	-	-
FY 2020 Plans: Initiate to manage, evaluate, verify and implement system assessments, strategies, improvements, program management, and systems engineering support. Initiate initial design and system interface design. Begin capabilities development efforts through threat assessment analysis.					
FY 2021 Base Plans: Continue management, evaluation, verification and implementation of system assessments, strategies, improvements, program management, and systems engineering support. Continue management and technical support for C-UAS Systems Integration Lab (SIL). Funding initiates assessment of material and non-material solutions, and continues threat assessments and development of advanced target discrimination and defeat					

UNCLASSIFIED

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 0604636N / <i>Counter Unmanned Aircraft System (C-UAS)</i>	Project (Number/Name) 3241 / <i>Counter Unmanned Aircraft Systems (C-UAS)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
capabilities for integration into the C-UAS FoS. Funding provides for continued development of common Command and Control (C2) and data fusion architecture for C-UAS FoS. FY 2021 OCO Plans: N/A FY 2020 to FY 2021 Increase/Decrease Statement: Increase associated with C2 Joint Capability Technology Demonstration (JCTD) as part of the USD (R&E) development roadmap for Fully-Networked Command, Control, and Communication.					
Accomplishments/Planned Programs Subtotals	0.000	3.100	14.259	0.000	14.259

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

N/A

Remarks

D. Acquisition Strategy

The Navy's acquisition strategy capitalizes on prior Rapid Development Capability efforts while leveraging existing DoD investments with the Government acting as Lead Systems Integrator. This acquisition strategy maintains commonality of current C-UAS solutions while continuing to evaluate, improve, and implement layered defense capabilities into the integrated FoS to defeat evolving threats. More details available at a higher classification level.

UNCLASSIFIED

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 0604636N / <i>Counter Unmanned Aircraft System (C-UAS)</i>	Project (Number/Name) 3241 / <i>Counter Unmanned Aircraft Systems (C-UAS)</i>
--	---	---

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
System Development	Various	Not Specified : Various	0.000	0.000		0.000	Jan 2020	11.661	Jan 2021	-		11.661	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		11.661		-		11.661	Continuing	Continuing	N/A

Remarks
FY20 Product Development reduction of \$2.400 due to Congressional Directed Reduction. FY21 funding increase by \$8.761 to \$11.661 in support of universal C2 Joint Capability Technology Demonstration (JCTD).

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Material solutions and threat assessments	Various	Not Specified : Various	0.000	0.000		1.750	Dec 2019	1.209	Dec 2020	-		1.209	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		1.750		1.209		-		1.209	Continuing	Continuing	N/A

Remarks
Support cost reduction in FY21 reflects delta between initial Threat Assessment funded in FY20 and annual Follow-on Threat Assessments executed through the FYDP.

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Program Management	Various	Not Specified : Various	0.000	0.000		0.550	Oct 2019	0.567	Oct 2020	-		0.567	Continuing	Continuing	Continuing
Government Engineering Support	WR	Not Specified : NAWC AD PAX	0.000	0.000		0.750	Oct 2019	0.773	Oct 2020	-		0.773	Continuing	Continuing	Continuing
Travel	WR	Not Specified : Various	0.000	0.000		0.050	Oct 2019	0.049	Oct 2020	-		0.049	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		1.350		1.389		-		1.389	Continuing	Continuing	N/A

UNCLASSIFIED

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 0604636N / <i>Counter Unmanned Aircraft System (C-UAS)</i>				Project (Number/Name) 3241 / <i>Counter Unmanned Aircraft Systems (C-UAS)</i>				
	Prior Years	FY 2019	FY 2020		FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	0.000	0.000	3.100		14.259	-	14.259	Continuing	Continuing	N/A	

Remarks

UNCLASSIFIED

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 0604636N / <i>Counter Unmanned Aircraft System (C-UAS)</i>							Project (Number/Name) 3241 / <i>Counter Unmanned Aircraft Systems (C-UAS)</i>							

Proj 3241	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025							
	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				
System Development									Initial Design Review												Capability Upgrade Development 1				Capability Upgrade Development 2							
									System Interface Design																							
													C2 Architecture Development																			
									SIL Standup								System Integration Assessment 1								System Integration Assessment 2				System Integration Assessment 3			
Technology Maturation					Initial Threat Assessment				Follow-on Threat Assessment 1				Follow-on Threat Assessment 2				Follow-on Threat Assessment 3				Follow-on Threat Assessment 4				Follow-on Threat Assessment 5							
																	Trade Studies															
Test and Evaluation																	System Regression Test 1								System Regression Test 2				System Regression Test 3			

2021PB - 0604636N - 3241

UNCLASSIFIED

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 0604636N / <i>Counter Unmanned Aircraft System (C-UAS)</i>	Project (Number/Name) 3241 / <i>Counter Unmanned Aircraft Systems (C-UAS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3241				
System Development: Initial Design Review	2	2021	3	2021
System Development: System Interface Design	3	2021	4	2021
System Development: C2 Architecture Development	4	2021	2	2022
System Development: Capability Upgrade Development 1	2	2023	1	2024
System Development: Capability Upgrade Development 2	3	2024	2	2025
System Development: System Integration Assessment 1	2	2022	4	2022
System Development: System Integration Assessment 2	4	2023	2	2024
System Development: System Integration Assessment 3	1	2025	3	2025
System Development: SIL Standup	2	2021	4	2021
Technology Maturation: Initial Threat Assessment	1	2020	4	2020
Technology Maturation: Follow-on Threat Assessment 1	1	2021	4	2021
Technology Maturation: Follow-on Threat Assessment 2	1	2022	4	2022
Technology Maturation: Follow-on Threat Assessment 3	1	2023	4	2023
Technology Maturation: Follow-on Threat Assessment 4	1	2024	4	2024
Technology Maturation: Follow-on Threat Assessment 5	1	2025	4	2025
Technology Maturation: Trade Studies	2	2023	3	2023
Test and Evaluation: System Test 1	3	2022	1	2023
Test and Evaluation: System Test 2	1	2024	3	2024
Test and Evaluation: System Test 3	2	2025	4	2025