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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 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603261N / <i>Tactical Airborne Reconnaissance</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	83.445	3.419	3.411	3.111	-	3.111	-	-	-	-	-	-
2467: <i>UxS Common Standards, Interoperability and Integration</i>	83.445	3.419	3.411	3.111	-	3.111	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This program element funds efforts to develop common technical and interoperability standards for current and future unmanned platforms, sensors, communications, and networking capabilities to achieve the required integration and interoperability of Unmanned Systems (UxS) represented in approved Naval Concept of Operations (CONOPS).

This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	3.419	3.411	3.481	-	3.481
Current President's Budget	3.419	3.411	3.111	-	3.111
Total Adjustments	0.000	0.000	-0.370	-	-0.370
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-0.257	-	-0.257
• Rate/Misc Adjustments	0.000	0.000	-0.113	-	-0.113

Change Summary Explanation

The FY 2022 funding request was reduced by \$0.257 million to account for the availability of prior year execution balances and \$0.113 million for rate adjustments.

Technical: Not applicable to baseline.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy										Date: May 2021		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603261N / <i>Tactical Airborne Reconnaissance</i>				Project (Number/Name) 2467 / <i>UxS Common Standards, Interoperability and Integration</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
2467: <i>UxS Common Standards, Interoperability and Integration</i>	83.445	3.419	3.411	3.111	-	3.111	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Naval Unmanned Aircraft Systems (UAS) strategy employs a family of UAS to perform various missions in support of naval and joint service missions from forward bases/platforms and naval ships.

In support of the Navy and Marine Corps' overall UAS strategy, this program develops common technical and interoperability standards for current and future unmanned platforms, sensors, communications, and networking capabilities to achieve the integration and interoperability of UAS represented in approved Naval Concept of Operations (CONOPS). Leveraging fleet input based on current operations and informed by future operational plans, these efforts ensure the desired interoperability and integration of Unmanned Systems (UxS) throughout the battlespace is achieved. This program also establishes the common architecture, including command & control, for all unmanned systems to support and inform future CONOPS development. This effort provides for a cross program view of naval unmanned systems and is the entry point for DoN and other services to address commonality and interoperability opportunities.

Specifically:

- Provides studies and demonstrations in support of Naval UAS Family of Systems (FoS) CONOPS development.
- Horizontally integrates across the Naval UAS FoS through the development of Naval Interoperability Profiles to achieve required unmanned capabilities and interoperability.
- Provides support for development of common and interoperable UAS standards for use throughout the Department of Defense (DoD) and the North Atlantic Treaty Organization (NATO).
- Conducts CONOPS studies, demonstrations, advanced development/prototyping, exercises for vehicle control, targeting, and weapons, sensor and payload employment.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Studies and Demonstrations	1.960	1.923	1.806	0.000	1.806
Articles:	-	-	-	-	-
Description: Studies and demonstrations to support CONOPS development from an interoperability perspective for effective integration of UAS. Develop a UAS architecture environment to allow for effective modeling and simulation of common UAS components in representative battlespace architectures.					

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603261N / <i>Tactical Airborne Reconnaissance</i>	Project (Number/Name) 2467 / <i>UxS Common Standards, Interoperability and Integration</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>FY 2021 Plans: Continue development of the UAS modeling and simulation of Fleet CONOPS scenarios. Demonstrate Manned/Unmanned Interoperability. Provide technical government engineering support.</p> <p>FY 2022 Base Plans: Continue development of the UAS modeling and simulation of Fleet CONOPS scenarios. Demonstrate Manned/Unmanned Interoperability. Provide technical government engineering support.</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: The decrease of \$0.117M is due to rate adjustments and to account for the availability of prior year execution balances.</p>					
<p>Title: Naval Interoperability & Standardization</p> <p align="right">Articles:</p> <p>Description: Develop UAS common technical standards implementations to achieve desired capabilities and interoperability between manned/unmanned systems.</p> <p>FY 2021 Plans: Continue to develop Unmanned Systems Naval Interoperability Profiles in support of approved Naval CONOPS. Support DoN, Joint Service and NATO coalition interoperability efforts. Provide government engineering support and contract services.</p> <p>FY 2022 Base Plans: Continue to develop Unmanned Systems Naval Interoperability Profiles in support of approved Naval CONOPS. Support DoN, Joint Service and NATO coalition interoperability efforts. Provide government engineering support and contract services.</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p>	1.459	1.488	1.305	0.000	1.305
	-	-	-	-	-

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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
The decrease of \$0.183M is due to rate adjustments and to account for the availability of prior year execution balances.					
Accomplishments/Planned Programs Subtotals	3.419	3.411	3.111	0.000	3.111

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

N/A

Remarks

D. Acquisition Strategy

The department will leverage existing government facilities and resources to develop common technical and interoperability standards for current and future unmanned sensors, communications, and networking capabilities to achieve the required interoperability and integration of unmanned systems represented in approved Naval Concept of Operations (CONOPS). Government engineering support will be used for standards development, architectural analysis, modeling and simulation efforts and testing.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 4				PE 0603261N / Tactical Airborne Reconnaissance				2467 / UxS Common Standards, Interoperability and Integration							
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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 year Prod Dev no longer funded in the FYDP	Various	Various : Various	18.711	0.000		0.000		0.000		-		0.000	-	-	-
Subtotal			18.711	0.000		0.000		0.000		-		0.000	-	-	N/A
Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
Studies & Demonstrations	WR	NAWCAD : Pax River, MD	5.398	0.250	Dec 2019	0.217	Dec 2020	0.155	Dec 2021	-		0.155	-	-	-
Standards Development	C/CPFF	Engility : Lexington Park, MD	5.612	1.334	Jan 2020	1.360	Jan 2021	1.239	Jan 2022	-		1.239	-	-	-
Prior year Support no longer funded in the FYDP	Various	Various : Various	29.815	0.000		0.000		0.000		-		0.000	-	-	-
Subtotal			40.825	1.584		1.577		1.394		-		1.394	-	-	N/A
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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 year Test & Eval no longer funded in the FYDP	Various	Various : Various	2.627	0.000		0.000		0.000		-		0.000	-	-	-
Subtotal			2.627	0.000		0.000		0.000		-		0.000	-	-	N/A
Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
Program Management Support	Various	Various : Various	5.469	0.125	Jan 2020	0.128	Jan 2021	0.067	Jan 2022	-		0.067	-	-	-

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

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UxS Common Standards, Interoperability and Integration	FY 2020				FY 2021				FY 2022				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
Unmanned Aircraft System (UAS) Targeting													
Weapons and Payload Employment													
Task and Manning Assessment													
Studies and Demonstrations													
Naval Interoperability and Standardization													

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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
<i>UxS Common Standards, Interoperability and Integration</i>				
Studies and Demonstrations:	1	2020	4	2022
Naval Interoperability and Standardization:	1	2020	4	2022