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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATION
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	50.592	554.193	-	554.193	753.077	791.557	736.511	748.827	Continuing	Continuing
3259: <i>TACAMO Recap</i>	0.000	0.000	50.592	554.193	-	554.193	753.077	791.557	736.511	748.827	Continuing	Continuing

Note

Funding for this effort transferred from PE 0101402N Project Unit 2959 beginning in FY 2022. PU 2959 FY 2021 funding was \$9.862M.

A. Mission Description and Budget Item Justification

The E-6 Take Charge and Move Out (TACAMO) Recapitalization Program (E-XX) provides for air vehicle replacement and mission systems modernization to augment and eventually replace the aging E-6B aircraft and TACAMO mission. The TACAMO mission provides airborne capability for survivable, enduring and reliable airborne command, control and communications between the United States (U.S.) National Command Authority (NCA) and the U.S. strategic forces. This mission is critical in the deterrence and management of a large-scale nuclear conflict. A dedicated communications platform, TACAMO aircraft feature the ability to communicate on virtually every radio frequency band from very low frequency (VLF) up through extremely high frequency (EHF) using a variety of modulations, encryptions and networks, minimizing the likelihood an emergency message being jammed by an enemy. Continued effort is needed to perform modeling and simulation, requirements derivation, contract development, technical evaluations and non-recurring engineering per the acquisition strategy approved in January 2022. Funding is for requirements development, modernization of mission systems, reducing integration risk on aircraft, increasing reliability and maintainability, cyber resilience, test assets, secure program facilities and Engineering & Manufacturing Development (EMD) contract development for Milestone B (MS-B) program initiation decision.

B. Program Change Summary (\$ in Millions)

	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>
Previous President's Budget	0.000	150.592	0.000	-	0.000
Current President's Budget	0.000	50.592	554.193	-	554.193
Total Adjustments	0.000	-100.000	554.193	-	554.193
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-100.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	554.193	-	554.193

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<u>Change Summary Explanation</u> FY 2022 has been reduced since the previous President's budget submission for the following Congressional reductions: \$60.1M for Air Vehicle lack of full funding \$39.9M for New Start delays --- FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.		

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATION				Project (Number/Name) 3259 / TACAMO Recap			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3259: TACAMO Recap	0.000	0.000	50.592	554.193	-	554.193	753.077	791.557	736.511	748.827	Continuing	Continuing
Quantity of RDT&E Articles		-	-	3	-	3	-	-	-	-		

Note

Funding for this effort transferred from PE 0101402N Project Unit 2959 beginning in FY22. PU 2959 FY21 funding was \$9.862M.

A. Mission Description and Budget Item Justification

The E-6 Take Charge and Move Out (TACAMO) Recapitalization Program (E-XX) provides for air vehicle replacement and mission systems modernization to augment and eventually replace the aging E-6B aircraft and TACAMO mission. The TACAMO mission provides airborne capability for survivable, enduring and reliable airborne command, control and communications between the United States (U.S.) National Command Authority (NCA) and the U.S. strategic forces. This mission is critical in the deterrence and management of a large-scale nuclear conflict. A dedicated communications platform, TACAMO aircraft feature the ability to communicate on virtually every radio frequency band from very low frequency (VLF) up through extremely high frequency (EHF) using a variety of modulations, encryptions and networks, minimizing the likelihood an emergency message being jammed by an enemy. Continued effort is needed to perform modeling and simulation, requirements derivation, contract development, technical evaluations and non-recurring engineering per the acquisition strategy approved in January 2022. Funding is for requirements development, modernization of mission systems, reducing integration risk on aircraft, increasing reliability and maintainability, cyber resilience, test assets, secure program facilities and Engineering & Manufacturing Development (EMD) contract development for Milestone B (MS B) program initiation decision.

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Product Development	0.000	18.651	502.042	0.000	502.042
Articles:	-	-	3	-	3
FY 2022 Plans: Funding provided for Very Low Frequency (VLF) and airframe non-recurring engineering (NRE) efforts.					
FY 2023 Base Plans: Fully fund three airframe test assets (quantity moved from FY 2022 to FY 2023 in FY 2023 request). One aircraft is for Air Vehicle testing and two aircraft are for mission systems testing, allowing simultaneous mission system, flight and ground test, and correction of deficiencies. Test airframe procurement will include all E-XX peculiar parts. FY 2023 will continue funding for Very Low Frequency (VLF) development, and airframe modification and production NRE contracts as well as GFE for mission system integration.					
FY 2023 OCO Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A					
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> Funds increase from FY 2022 to FY 2023 due to full funding of test assets, increased funding for VLF design and engineering, airframe modification and production NRE and initial funding for the mission systems integration government furnished equipment.					
<i>Title:</i> Program Management and Support	0.000	31.941	52.151	0.000	52.151
<i>Articles:</i>	-	-	-	-	-
<i>FY 2022 Plans:</i> Funding provided to support acquisition strategy and other milestone documentation preparation that will lead to prime contract award, program management, engineering and logistics tasks for E-XX technical and programmatic reviews, development/review of documentation, source selection activities and EMD contract development and award preparation.					
<i>FY 2023 Base Plans:</i> Funding provided to support the increased need for technical expertise and support for development efforts of VLF system modernization, airframe modification design, mission systems integration, program management, engineering and logistics tasks for E-XX technical and programmatic reviews to prepare for Milestone B in fourth quarter of FY 2023 and parallel competitive EMD contract development and subsequent award in first quarter of FY 2024.					
<i>FY 2023 OCO Plans:</i> N/A					
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> Funds increase from FY 2022 to FY 2023 due to test asset acquisition and the increased technical expertise and support necessary in preparation and execution of Systems Functional Review, Integrated Logistics Assessment, Milestone B and competitive EMD contract preparation and award in first quarter of FY 2024. Increased FY 2023 developmental activities activities are following the National Airborne Operations Center (NAOC) Executive Airlift TACAMO (NEAT) Analysis of Alternatives (AoA) completion in accordance with ASN (RDA), JROC, USD (A&S), and USSTRATCOM guidance.					
Accomplishments/Planned Programs Subtotals	0.000	50.592	554.193	0.000	554.193

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

Line Item	FY 2021	FY 2022	FY 2023	FY 2023	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Cost To	Total Cost
			Base	OCO	Total					Complete	
• RDTE/0101402N/2959: <i>Navy Strategic Comm Project</i>	9.862	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.266

Remarks

D. Acquisition Strategy

Research, Development, Test & Evaluation, Navy (RDT&E N) Project Unit 3259 funds E-XX Program requirement analyses, requirements development, test asset (C-130J-30 aircraft) and Airframe/VLF NRE contracts. The mission concept of operations, system capability requirements, and material solution will continue design maturation and form the foundation for the revised and accelerated acquisition strategy and the program life cycle cost estimates in support of program milestone decision review projected in FY 2023. Execution of NRE contracts for Airframe, Very Low Frequency and Mission Systems continue, the results of which will be integrated into follow-on Engineering and Manufacturing Development contract requirements at MS B. FY 2023 NRE and test aircraft funding parallels initial mission system development, supporting post-MS B integration of mission systems onto the test aircraft platforms.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Primary HW Development - Airframe	C/FPIF	Lockheed Martin : Marietta, GA	0.000	0.000		0.000		395.212	Jan 2023	-		395.212	Continuing	Continuing	Continuing
Primary HW Development - Air Vehicle Integration	C/CPFF	Lockheed Martin : Marietta, GA	0.000	0.000		9.987	Mar 2022	74.523	Jan 2023	-		74.523	Continuing	Continuing	Continuing
Primary HW Development - VLF	C/CPFF	Collins Aerospace : Richardson, TX	0.000	0.000		8.664	Feb 2022	26.307	Nov 2022	-		26.307	Continuing	Continuing	Continuing
Primary HW Development-Mission Systems	MIPR	Various : Various	0.000	0.000		0.000		6.000	Feb 2023	-		6.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		18.651		502.042		-		502.042	Continuing	Continuing	N/A

Remarks
 FY 2023 funds three C-130J-30s test assets that will support initial testing, analysis, and mission system integration efforts in support of subsequent Developmental Test and Evaluation. One aircraft is for Air Vehicle testing and two aircraft are for mission systems testing, allowing simultaneous mission system, flight and ground test, and correction of deficiencies. FY 2022 Air Vehicle Cost Category Item split in FY 2023 request to differentiate between test asset hardware (Airframe Cost Category Item) and non-recurring engineering (Air Vehicle Integration Cost Category Item). Air Vehicle non-recurring engineering (NRE) will develop and test necessary design changes and modifications to the C-130J-30 including power generation systems, cooling, flight deck avionics, cyber hardening, structural modifications, to support integration of E-XX mission system equipment. Very Low Frequency (VLF) development investment modernizes legacy E-6B High Power Transmit System power amplifier and trailing wire antenna assemblies hardware for increased performance, reliability and maintainability, reduced weight and volume, and lower life cycle costs. Mission Systems Integration is incorporated into the EMD contract eliminating the broad band agency announcement previously planned in FY 2022. The EMD contract designs the architecture and integration of a cyber-resilient communications systems to transform a modified C-130J-30 into E-XX. FY 2023 Mission Systems funding is for government furnished equipment.

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Development Support	WR	NAWCAD : Patuxent River	0.000	0.000		7.847	Nov 2021	11.145	Nov 2022	-		11.145	Continuing	Continuing	Continuing
Development Support	Various	Various : Various	0.000	0.000		6.083	Nov 2021	8.648	Nov 2022	-		8.648	Continuing	Continuing	Continuing
Integrated Logistics Support	WR	NAWCAD : Patuxent River	0.000	0.000		2.814	Nov 2021	4.411	Nov 2022	-		4.411	Continuing	Continuing	Continuing
Integrated Logistics Support CSS	Various	Various : Various	0.000	0.000		1.286	Nov 2021	2.372	Nov 2022	-		2.372	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		6.618	Nov 2021	12.942	Nov 2022	-		12.942	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWCTSD : Orlando, Florida	0.000	0.000		0.512	Nov 2021	0.801	Nov 2022	-		0.801	Continuing	Continuing	Continuing
Contractor Engineering Support	Various	Various : Various	0.000	0.000		0.389	Nov 2021	1.139	Nov 2022	-		1.139	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		25.549		41.458		-		41.458	Continuing	Continuing	N/A

Remarks
Support growth is necessary to prepare for MS-B in fourth quarter of FY 2023 and parallel major competitive EMD contract award scheduled for first quarter FY 2024.

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Developmental Test & Evaluation	WR	NAWCAD : Pax River, MD.	0.000	0.000		0.583	Nov 2021	2.086	Nov 2022	-		2.086	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	0.000	0.000		0.216	Nov 2021	0.314	Nov 2022	-		0.314	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.799		2.400		-		2.400	Continuing	Continuing	N/A

Remarks
Test and Evaluation support growth is necessary to prepare for MS-B in fourth quarter of FY 2023 and parallel major competitive EMD contract award scheduled for first quarter of FY 2024.

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.094	Nov 2021	2.500	Nov 2022	-		2.500	Continuing	Continuing	Continuing

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Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		2.734	Nov 2021	3.538	Nov 2022	-		3.538	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Davis Defense Group : Patuxent River, MD	0.000	0.000		1.665	Nov 2021	2.062	Nov 2022	-		2.062	Continuing	Continuing	Continuing
Travel	Various	Various : Various	0.000	0.000		0.100	Oct 2021	0.193	Oct 2022	-		0.193	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		5.593		8.293		-		8.293	Continuing	Continuing	N/A

Remarks
Program Management support growth is necessary to prepare for MS-B in fourth quarter of FY 2023 and parallel major competitive EMD contract award scheduled for first quarter of FY 2024.

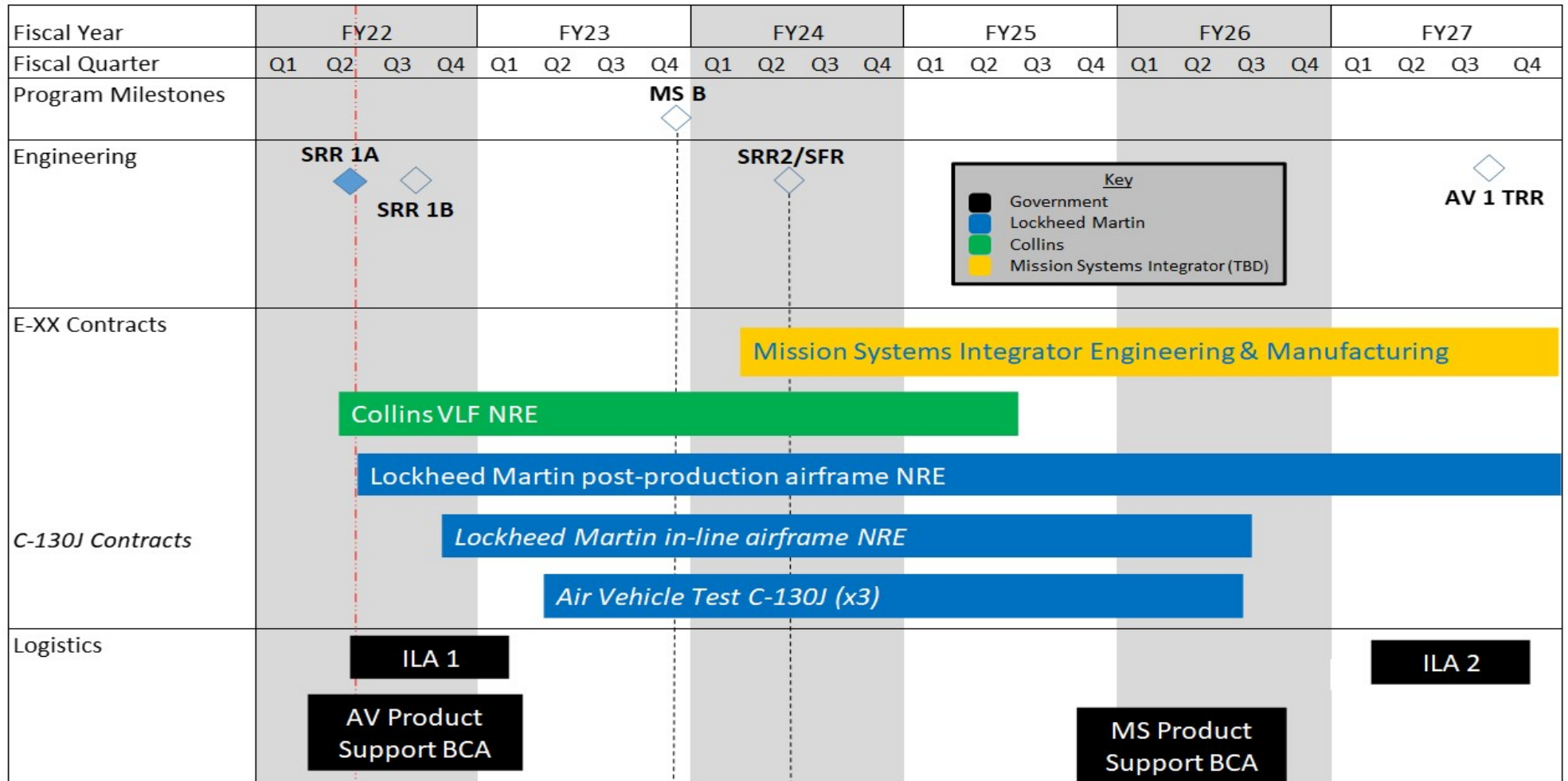
	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	50.592	554.193	-	554.193	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATI ON	Project (Number/Name) 3259 / TACAMO Recap
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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATION	Project (Number/Name) 3259 / TACAMO Recap

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3259				
Acquisition Milestones & Program Management: Milestone B	4	2023	4	2023
Contracts: Very Low Frequency Non-Recurring Engineering	2	2022	2	2025
Contracts: Air Vehicle post-production Non-Recurring Engineering	2	2022	4	2027
Contracts: Air Vehicle in-line airframe Non-Recurring Engineering	4	2022	3	2026
Contracts: Airframe test assets, including C-130J (x3)	2	2023	2	2026
Contracts: Mission Systems Integration Engineering & Manufacturing Development	1	2024	4	2027
Engineering: System Requirements Review-1A	2	2022	2	2022
Engineering: System Requirements Review-1B	3	2022	3	2022
Engineering: System Functional Review	2	2024	2	2024
Engineering: Air Vehicle 1 Test Readiness Review	3	2027	3	2027
Logistics: Integrated Logistics Assessment-1	2	2022	1	2023
Logistics: Air Vehicle Product Support BCA	1	2022	1	2023
Logistics: Integrated Logistics Assessment-2	2	2027	4	2027
Logistics: Mission System Product Support BCA	4	2025	3	2026