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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force **Date:** March 2024

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0401318F / CV-22
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	177.789	9.678	18.127	26.249	0.000	26.249	30.865	26.018	21.878	21.099	Continuing	Continuing
676033: <i>CV-22 RDT&E POST PRODUCTION</i>	177.789	9.678	18.127	26.249	0.000	26.249	30.865	26.018	21.878	21.099	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Program MDAP/MAIS Code: 212
Project MDAP/MAIS Code(s): N42

A. Mission Description and Budget Item Justification

The CV-22 is the Air Force Special Operations Forces (SOF) variant of the joint multi-mission V-22 tilt rotor aircraft. The CV-22 provides long-range, high-speed infiltration, exfiltration, personnel recovery, and resupply to Special Forces teams in hostile, denied, and politically sensitive areas. The Navy is the lead service for the Joint V-22 program. The Joint Program Manager is responsible for managing all variants of the V-22. Department of the Navy (DoN) funds the development of the MV-22 and CMV-22. The Air Force funds the service common portion of the CV-22 while United States Special Operations Command (USSOCOM) funds the development and procurement of SOF peculiar systems. CV-22 RDT&E funding provides for the development, integration, and testing of service-common, mission critical aircraft modifications to improve operational effectiveness, platform survivability, and aircraft availability.

Airframe Enhancements: RDT&E funds the design, development, and testing of improvements to airframe structures, aircraft electro-mechanical and hydraulic hardware, and dynamic components to counteract the effects of structural fatigue and improve the durability and readiness of V-22 aircraft. Refinement of aircraft system's components to improve longevity and/or maintainability while protecting their performance are meant to allow continued CV-22 operation as the aircraft ages.

Enhanced Self-Deployment: RDT&E funding provides for the design, development, and testing of aircraft modifications to improve aircraft self-deployment capabilities (e.g. operating range, global response time) to mitigate emerging threats to the aircraft and mission accomplishment, and to identify and assess emerging air vehicle, propulsion system, avionics architecture, electronic warfare, situational awareness, and other weapon system solutions to meet CV-22 Block 20 operational requirements.

CV-22 funding also supports innovation activities to include studies, analyses, requirements definition, and quick-reaction capability prototypes/demonstrations to accelerate planning for technology transition, technology insertion and future acquisition programs.

This funding may include emerging requirements to support Program Support Costs (PSC), Advisory and Assistant Service (A&AS), system integration lab, trainers, equipment and other government costs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F,

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and 0606398F. In FY 2023 \$0.000 million was expended for civilian pay expenses in this program element, and in FY 2024 \$0.000 million is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	10.121	18.127	16.444	0.000	16.444
Current President's Budget	9.678	18.127	26.249	0.000	26.249
Total Adjustments	-0.443	0.000	9.805	0.000	9.805
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.326	0.000			
• Other Adjustments	-0.117	0.000	9.805	0.000	9.805

Change Summary Explanation

FY 2025 funding request was increased by 9.805 million to support obsolescence redesigns and enhanced self-deployment capabilities.

The FY 2025 funding request was reduced by \$0.185 million to account for the availability of prior year execution balances.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
Title: Airframe Enhancement	6.578	4.551	11.444
Description: Airframe Enhancements funds the improvement of airframe structures, aircraft electro-mechanical hardware, and dynamic components to counteract the effects of structural fatigue and improve the durability and readiness of V-22 aircraft to include design, development, and testing of V-22 Nacelle components. This RDT&E funding provides for the design, development, and testing of redesign support or loadbearing airframe elements to provide structural reinforcement and improved longevity. Enhanced armor protective performance with reduced weight and space impacts are a possible area for development. Airframe Enhancement funds also provide for refinements of hydraulic, landing gear, or fuel system component to improve and protect their performance. Items such as pumps, lines, tanks/reservoirs/bladders and/or struts may receive enhancements to extend their life and improve their maintainability. Finally, Airframe Enhancements funds target exploring improvements to all V-22			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
dynamic components, from rotor blades and heads to gearboxes and flight control surfaces with the goals of protecting them from vibrational and frictional wear and enhancing their reliability and readiness.				
FY 2024 Plans: Continue design, development, and testing of Airframe Enhancements.				
FY 2025 Plans: Planned Projects to include but not limited to Fuel Cell Obsolescence/Redesign.				
FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to ramp up of obsolescence redesign efforts.				
Title: Enhanced Self-Deployment Capabilities		3.100	13.576	14.805
Description: Develops capabilities to enhance self-deployment, such as improved ice protection, engine performance, performance buyback, navigation, communications, and battle space awareness/networking capabilities/airborne mission networking (ABMN); situational awareness; electronic warfare; weapons systems; defensive avionics systems and architecture; weight reduction initiatives; modular avionics/cyber security implementation and other changes to the underlying aircraft systems necessary to enable these capabilities.				
FY 2024 Plans: Continue design and development activities, but not limited to the following: Support for ABMN Systems, JARVIS Mission Computer, Flight Computer Redesigns, PNT Modernizations, Platform Data Service (PDS) Development, and Control Display Unit (CDU).				
FY 2025 Plans: Planned Projects include, but not limited to the following: Support for ABMN Systems, JARVIS Mission Computer, Flight Computer Redesigns, and Control Display Unit (CDU).				
FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to redesigns and AbMN efforts.				
Accomplishments/Planned Programs Subtotals		9.678	18.127	26.249

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

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 07 PE 1160403BB: <i>Special Operations, Aviation Systems</i>	11.757	21.619	15.727	-	15.727	19.064	19.445	19.834	20.231	Continuing	Continuing
• PAAF 02 Line Item 1000CV2200: <i>Defense-Wide 0300D SOCOM</i>	78.726	75.981	49.403	-	49.403	19.719	17.551	52.281	53.538	Continuing	Continuing
• APAF 05 Line Item <i>V02200: CV-22 Mods</i>	153.026	153.006	42.795	-	42.795	100.356	96.582	79.524	65.408	Continuing	Continuing
• APAF 07 C0V220: <i>CV-22 Post Production Support</i>	0.000	0.000	12.024	-	12.024	7.087	7.078	7.014	7.014	Continuing	Continuing
• APAF 06 Line Item 000999: <i>CV-22 Initial Spares/Repair Parts</i>	2.254	3.989	3.738	-	3.738	5.421	6.037	5.776	5.010	Continuing	Continuing

Remarks

E. Acquisition Strategy

The V-22 Joint Program Office - Naval Air Systems Command - NAVAIRSYSCOM, PMA-275 is developing new capabilities for the V-22 in block increments.

Airframe Enhancements: Fuel Cell Obsolescence Redesign will utilize a combination of sole source and competitive contracts.

Enhanced Self-Deployment Capabilities: Flight Control System Redesign, JARVIS Mission Computer, Control Display Unit Redesign, and support for Airborne Mission Networking Systems will utilize a combination of sole source and competitive contracts.

Development activities for the V-22 program to date have been primarily performed by the prime contractor, Bell-Boeing, on a sole-source basis. Bell-Boeing is a strategic partnership between Bell Helicopter and Boeing Integrated Defense Systems. Efforts are underway to continue increasing competition where feasible, depending primarily on the level of platform integration required and Government rights to technical data.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0401318F / CV-22				676033 / CV-22 RDT&E POST PRODUCTION							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
V-22 Airframe Enhancements	Various	Various : TBD	91.609	2.378	Mar 2023	1.400	Mar 2024	8.255	Mar 2025	-		8.255	10.300	113.942	-
CV-22 Osprey Enhanced Self-Deployment Capability	Various	Various : TBD	58.308	3.100	Jun 2023	11.901	Jun 2024	10.679	Jun 2025	-		10.679	47.060	131.048	-
Subtotal			149.917	5.478		13.301		18.934		-		18.934	57.360	244.990	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
CV-22 Osprey Engineering Technical Support and Studies	Various	Various : TBD	11.567	1.900	Mar 2023	2.345	Mar 2024	2.574	Mar 2025	-		2.574	5.948	24.334	-
Subtotal			11.567	1.900		2.345		2.574		-		2.574	5.948	24.334	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
CV-22 Osprey Test & Evaluation Technical Support	Various	Various : TBD	14.723	2.100	Dec 2022	2.240	Dec 2023	2.500	Dec 2024	-		2.500	3.634	25.197	-
Subtotal			14.723	2.100		2.240		2.500		-		2.500	3.634	25.197	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
CV-22 Osprey Program Support Costs	Various	Various : TBD	1.582	0.200	Dec 2022	0.241	Dec 2023	2.241	Dec 2024	-		2.241	1.496	5.760	-
Subtotal			1.582	0.200		0.241		2.241		-		2.241	1.496	5.760	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force							Date: March 2024				
Appropriation/Budget Activity 3600 / 7			R-1 Program Element (Number/Name) PE 0401318F / CV-22				Project (Number/Name) 676033 / CV-22 RDT&E POST PRODUCTION				

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	177.789	9.678	18.127	26.249	-	26.249	68.438	300.281	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401318F / CV-22	Project (Number/Name) 676033 / CV-22 RDT&E POST PRODUCTION

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Airframe Enhancement	
Prop-rotor Blade Improvements**	
Infrared Suppressors **	
Dynamic Components Redesign	
Airframe Obsolescence Redesign**	
Fuel Cell Redesign	
Next Block Mods - NRE Systems**	
HCE PRGB Input Quill / Clutch Redesign**	
Enhanced Self-Deployment	
AbMN - JARVIS Mission Computer **	
Flight Control System Re-design Step 1	
Flight Control System Re-design Step 2	
Control Display Unit Keyboard Re-design	
Cockpit Modernization	
Required Navigation Precision (RNP-RNAV)	

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Airframe Enhancement</i>				
Prop-rotor Blade Improvements**	1	2023	4	2024
Infrared Suppressors **	1	2023	4	2029
Dynamic Components Redesign	1	2023	4	2029
Airframe Obsolescence Redesign**	1	2025	4	2029
Fuel Cell Redesign	1	2024	4	2027
Next Block Mods - NRE Systems**	1	2027	4	2029
HCE PRGB Input Quill / Clutch Redesign**	1	2024	4	2029
<i>Enhanced Self-Deployment</i>				
AbMN - JARVIS Mission Computer **	1	2023	4	2026
Flight Control System Re-design Step 1	1	2023	4	2026
Flight Control System Re-design Step 2	1	2026	4	2029
Control Display Unit Keyboard Re-design	1	2024	4	2025
Cockpit Modernization	1	2026	4	2029
Required Navigation Precision (RNP-RNAV)	1	2026	4	2029