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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

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 0401115F / C-130 Airlift Squadron
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	12.383	0.407	5.427	0.000	5.427	0.000	0.000	0.000	0.000	0.000	18.217
675250: <i>C-130H Avionics Modernization Program (AMP) Increment 2</i>	-	12.383	0.407	5.427	0.000	5.427	0.000	0.000	0.000	0.000	0.000	18.217

A. Mission Description and Budget Item Justification

The C-130H is a medium sized tactical transport aircraft providing multi-purpose theater support throughout the globe. The C-130H fleet supports several diverse Air Force roles, including but not limited to tactical and inter-theater airlift and airdrop support, Arctic resupply, special operations support, aeromedical evacuation, aerial spraying, firefighting duties, and natural disaster and humanitarian relief missions.

Funding provides weapon system modifications and upgrades to meet USAF mission requirements for the LC/C-130H fleets.

C-130H AMP Increment 2 includes digital avionics upgrades (e.g. Flight Management System, improved navigation), cockpit modernization (e.g. glass/engine flight displays) and resolves select obsolescence and Diminishing Manufacturing Source (DMS) issues. RDT&E efforts will cover software development, design, integration, developmental and operational test, studies and risk reduction efforts, trial kit buy and installation, technical order development validation and verification, spares and peculiar support equipment in support of trial kit installs, Systems Integration Laboratory (SIL) development, type 1 training and C-130H aircrew and maintenance training systems and courseware development efforts, program office support and other efforts necessary to fulfill program requirements. Project 672030, MUOS/SATURN, is now included in project 675250, AMP Increment 2. The MUOS/SATURN radio addresses future DMS/integration issues and incorporates MUOS/SATURN capabilities.

The AMP Increment 2 program experienced significant software development and flight test planning issues in FY22. These issues led to the program being rebaselined; Milestone C is now planned for Sep 2024.

This funding includes Rapid Global Mobility (RGM) platform related activities including but not limited to prototyping, capability development, process activities, planning analysis and systems engineering activities.

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, 0606398F. In FY2022 \$1.063 million was expended for civilian pay expenses in this program element, and in FY2023 \$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.

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	12.552	0.407	0.415	0.000	0.415
Current President's Budget	12.383	0.407	5.427	0.000	5.427
Total Adjustments	-0.169	0.000	5.012	0.000	5.012
• 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	-0.169	0.000			
• Other Adjustments	0.000	0.000	5.012	0.000	5.012

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675250: *C-130H Avionics Modernization Program (AMP) Increment 2*

Congressional Add: *Infrared Suppression*

	FY 2022	FY 2023
	2.800	-
Congressional Add Subtotals for Project: 675250	2.800	-
Congressional Add Totals for all Projects	2.800	-

Change Summary Explanation

FY 2024 funding increased by \$5.012 million due to program flight testing completion and updates to support systems program being rebaselined.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron				Project (Number/Name) 675250 / C-130H Avionics Modernization Program (AMP) Increment 2			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675250: C-130H Avionics Modernization Program (AMP) Increment 2	-	12.383	0.407	5.427	0.000	5.427	0.000	0.000	0.000	0.000	0.000	18.217
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The C-130H AMP Increment 2 upgrades the C-130H fleet with comprehensive avionics and cockpit modernization which replaces aging unreliable equipment and adds combat capability enhancements. It also updates radios due to future Diminishing Manufacturing Sources (DMS)/integration issues and incorporates MUOS/SATURN radio capabilities. It also addresses select obsolescence and DMS issues with solutions that may include life of type buys or bridge buys. DMS efforts to include removal of end-of-life software/hardware within simulators systems and move to a modular, common open system architecture that is sustainable and cyber-resilient. Implement requirements and standards defined under the Simulator Common Architecture Requirements and Standards (SCARS) initiative.

Funding provides weapon system modifications and upgrades to meet USAF mission requirements for the LC/C-130H fleets.

RDT&E efforts include but are not limited to software development, design, integration, development and operational test, studies and risk reduction efforts, trial kit buy and installation, technical order development validation and verification, peculiar support equipment and spares in support of trial kit installs, SIL development, type 1 training, and C-130H aircrew and maintenance training systems and courseware development efforts, program office support and other efforts required to fulfill requirements. Project 672030, MUOS/SATURN, is now included in project 675250, AMP Increment 2. The MUOS/SATURN radio addresses future DMS/integration issues and incorporates MUOS/SATURN capabilities.

The C-130H AMP Increment 2 program modifies up to 80 C-130H USAF owned aircraft consisting of H3s, H2.5s, H2s, and LC-130H aircraft. The modification effort will have up to three prototype aircraft representative of variations in the mission designs and required for accomplishment of the Engineering and Manufacturing Development (EMD) phase with the remaining aircraft modified in the production phase.

The program experienced significant software development and flight test planning issues in FY2022. These issues led to the program being rebaselined; Milestone C is now planned for Sep 2024.

In order to meet the American Mid-Band Initiative, the Station Keeping Equipment (SKE) replacement program will develop and field a new/upgraded formation flight system to C-130H AMP Inc 2 configured aircraft.

This funding includes Rapid Global Mobility (RGM) platform related activities including but not limited to prototyping, capability development, process activities, planning analysis and systems engineering activities.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron	Project (Number/Name) 675250 / C-130H Avionics Modernization Program (AMP) Increment 2
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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, 0606398F. In FY2022, \$1.063 million was expended for civilian pay expenses in this program element, and in FY2023 \$0.000 is forecast for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
<p>Title: C-130H Avionics Modernization Program (AMP) Increment 2</p> <p>Description: The program is currently executing the Engineering and Manufacturing Development (EMD) phase activities.</p> <p>FY 2023 Plans: Continuation of EMD activities, primarily related to development and operational test and weapon system trainer and courseware development. Other remaining actions may include but are not limited to software development, design, integration, program office support, studies and risk reduction efforts, technical order development validation and verification, SIL development, type 1 training, and other efforts required to fulfill program requirements.</p> <p>FY 2024 Plans: Complete EMD activities, primarily related to development and operational test completion and weapon system trainer and courseware completion. Other remaining actions may include but are not limited to Joint Mission Planning System and other supporting system updates, studies and risk reduction efforts, technical order development validation and verification, SIL activities, type 1 training, and other efforts. Required to fulfill program requirements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding increased due to delays in program flight testing and AMP Increment 2 updates to support systems stemming from the program being rebaselined.</p>	9.583	0.407	5.427
Accomplishments/Planned Programs Subtotals	9.583	0.407	5.427

	FY 2022	FY 2023
<p>Congressional Add: Infrared Suppression</p> <p>FY 2022 Accomplishments: FY2023 Plans: Conduct effectiveness and viability tests on two infrared suppression systems</p>	2.800	-
Congressional Adds Subtotals	2.800	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron	Project (Number/Name) 675250 / C-130H Avionics Modernization Program (AMP) Increment 2

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	
			Base	OCO	Total					Complete	Total Cost
• APAF 05 Line Item C13000: C-130	272.251	224.702	71.177	-	71.177	144.290	167.908	254.852	183.383	48.742	1,367.305
• APAF 06 Line Item 000999: <i>Initial Spares/Repair Parts</i>	0.419	1.153	0.695	-	0.695	2.672	3.214	3.317	3.386	Continuing	Continuing

Remarks

None

D. Acquisition Strategy

C-130H AMP Increment 2 contract was awarded 3rd quarter of 2019. Current efforts are primarily focused on the Engineering and Manufacturing Development (EMD) activities under a Fixed-Price Incentive (Firm) contract structure.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0401115F / C-130 Airlift Squadron				675250 / C-130H Avionics Modernization Program (AMP) Increment 2								
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
C-130H AMP Increment 2 EMD Contract	C/FPIF	L3Harris : Waco, TX	-	0.331	Nov 2021	0.407	Jun 2023	2.427	Nov 2023	-		2.427	0.000	3.165	91.739	
Joint Mission Planning System	C/FPIF	TBD : TBD	-	-		-		2.000	Apr 2024	-		2.000	0.000	2.000	4.700	
Infrared Suppression	C/TBD	TBD : TBD	-	2.800	Jun 2023	-		-		-		-	0.000	2.800	2.800	
Subtotal			-	3.131		0.407		4.427		-		4.427	0.000	7.965	N/A	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
Other Government Costs	TBD	Not specified. : TBD	-	-		-		0.100	May 2024	-		0.100	0.000	0.100	3.777	
Direct Cite Civilian Pay	C/CPAF	Not specified. : TBD	-	1.063	Oct 2021	-		-		-		-	0.000	1.063	0.960	
Subtotal			-	1.063		-		0.100		-		0.100	0.000	1.163	N/A	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
C-130H AMP Increment 2 Development Testing	PO	L3Harris : Waco, TX	-	4.500	Nov 2021	-		-		-		-	0.000	4.500	8.800	
Subtotal			-	4.500		-		-		-		-	0.000	4.500	N/A	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
C-130H AMP Increment 2 PSC Contractor Services	Various	Not Specified : TBD	-	2.992	Feb 2022	-		-		-		-	0.000	2.992	14.238	

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron	Project (Number/Name) 675250 / C-130H Avionics Modernization Program (AMP) Increment 2
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Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
C-130H AMP Increment 2 PSC - Government Cost	Various	Not Specified : TBD	-	0.697	Oct 2021	-		0.900	Jan 2024	-		0.900	0.000	1.597	0.773
Subtotal			-	3.689		-		0.900		-		0.900	0.000	4.589	N/A
Project Cost Totals			-	12.383		0.407		5.427		-		5.427	0.000	18.217	N/A

Remarks
 FINANCIAL PERFORMANCE: AMP Increment 2 is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the AMP Increment 2 EMD phase contract is an FPIF contract with progress payments. Twenty percent (20%) of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron	Project (Number/Name) 675250 / C-130H Avionics Modernization Program (AMP) Increment 2

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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

C-130H AMP Increment 2	
Design/Integration	
Design/Integration Training Development	
Development Testing - Phase 1	
Development Testing - Phase 2	
Milestone C	
Infrared Suppression	
Effectiveness/Viability Testing	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron	Project (Number/Name) 675250 / C-130H Avionics Modernization Program (AMP) Increment 2

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>C-130H AMP Increment 2</i>				
Design/Integration	1	2022	2	2024
Design/Integration Training Development	1	2022	2	2024
Development Testing - Phase 1	3	2023	1	2024
Development Testing - Phase 2	3	2024	3	2024
Milestone C	4	2024	4	2024
<i>Infrared Suppression</i>				
Effectiveness/Viability Testing	3	2023	3	2024