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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0401115F I C-130 Airlift Squadron							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	0.000	15.599	10.219	105.988	0.000	105.988	127.778	112.673	33.507	0.595	0.000	406.359
675248: C-130H Avionics Modernization Program (AMP) Increment 1	0.000	8.421	1.965	5.864	0.000	5.864	0.015	0.000	0.000	0.000	0.000	16.265
675250: C-130H Avionics Modernization Program (AMP) Increment 2	0.000	7.178	8.254	100.124	0.000	100.124	127.763	112.673	33.507	0.595	0.000	390.094
A. Mission Description and Budget Item Justification												
The FY19 funding was reduced by \$7.245M from "C-130H Avionics Modernization Program (AMP) Increment 1" to account for the availability of prior year execution balances.												
The FY19 funding was reduced by \$20.475M from "C-130H Avionics Modernization Program (AMP) Increment 2" to account for the availability of prior year execution balances.												
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.												
C-130H AMP Increment 1 addresses modifications to meet airspace compliance mandates and safety requirements. RDT&E efforts cover design, integration, developmental and operational test, trial kit buy and installation, spares and peculiar support equipment in support of trial kit installs, type 1 training and C-130H aircrew and maintenance training systems and courseware development efforts.												
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, trial kit buy and installation, technical order development validation and verification, spares and peculiar support equipment in support of trial kit installs, Systems Integrated Lab (SIL) development, type 1 training and C-130H aircrew and maintenance training systems and courseware development efforts.												
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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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force				Date: February 2018		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0401115F I C-130 Airlift Squadron				
This program element may include necessary civilian pay expenses required to manage, execute, and deliver C-130H weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.						
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget		15.599	10.219	133.708	0.000	133.708
Current President's Budget		15.599	10.219	105.988	0.000	105.988
Total Adjustments		0.000	0.000	-27.720	0.000	-27.720
• 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		0.000	0.000			
• Other Adjustments		0.000	0.000	-27.720	0.000	-27.720
Change Summary Explanation						
FY19 includes a reduction of \$7.245M from "C-130H AMP Increment 1" to account for availability of prior year execution balances.						
FY19 includes a reduction of \$20.475M from "C-130H AMP Increment 2" to account for availability of prior year execution balances.						

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron				Project (Number/Name) 675248 / C-130H Avionics Modernization Program (AMP) Increment 1			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675248: C-130H Avionics Modernization Program (AMP) Increment 1	0.000	8.421	1.965	5.864	0.000	5.864	0.015	0.000	0.000	0.000	0.000	16.265
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The C-130H AMP Increment 1 program performs modifications to meet airspace compliance and safety mandates; the mod includes automatic dependent surveillance-broadcast (ADS-B) Out, enhanced Mode S, 8.33 kHz radios, and cockpit voice recorder/digital flight data recorder (CVR/DFDR).

RDT&E efforts include but are not limited to, design, integration, development and operational test, trial kit buy and installation, spares and peculiar support equipment in support of trial kit installs, type 1 training and C-130H aircrew and maintenance training systems and courseware development efforts (including Mode 5 effort for the trainers). Obsolescence and Diminishing Manufacturing Sources (DMS) issues will be resolved with solutions that may include life of type buys or bridge buys. DMS efforts to include removal of end-of-life software/hardware within simulator 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.

The C-130H AMP Increment 1 program currently modifies 176 aircraft (166x C-130Hs and 10x LC-130Hs) consisting of H3s, H2.5s, H2s and H1s; and includes 131 Air National Guard aircraft, and 45 Air Force Reserve aircraft. The modification effort will have 4 prototype aircraft representative of variations in the mission designs and required for accomplishment of the Engineering and Manufacturing Development (EMD) phase with the remaining 172 aircraft modified in the production phase.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver C-130H weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

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

	FY 2017	FY 2018	FY 2019
Title: C-130H AMP Increment 1	8.421	1.965	5.864
Description: Executing Engineering and Manufacturing Development (EMD) phase activities.			
FY 2018 Plans: Continuation of EMD activities including design & integration, trial kit assembly and installations on test aircraft, peculiar support equipment and spares buy, technical order development and validation/verification, development and operational testing.			
FY 2019 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron				Project (Number/Name) 675248 / C-130H Avionics Modernization Program (AMP) Increment 1				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2017	FY 2018	FY 2019
Complete development portion of Weapon System Trainers (WST).												
FY 2018 to FY 2019 Increase/Decrease Statement: Funding increased \$3.899M (see above for details)												
Accomplishments/Planned Programs Subtotals										8.421	1.965	5.864
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• APAF 05 Line Item C13000: C-130	-	15.500	7.637	-	7.637	7.338	3.846	-	-	0.000	34.321	
• APAF 06 Line Item 000999: Initial Spares/Repair Parts	-	2.814	0.616	-	0.616	-	-	-	-	0.000	3.430	
Remarks C-130H AMP Increment 1 Procurement funding begins in FY18.												
D. Acquisition Strategy C-130H AMP Increment 1 acquisition strategy (30 Sept 2015) was to conduct a competitive small business set aside source selection for ADS-B Out and Enhanced Mode S followed by a Federal Acquisition Regulation (FAR) Part 15 contract award. The EMD contract was awarded in 2nd quarter FY17. Preliminary Design Review (PDR) completed 3rd quarter FY17 and Critical Design Review (CDR) completed 4th quarter FY17. Current efforts continue to focus on the execution of Engineering and Manufacturing Development (EMD).												
E. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron				Project (Number/Name) 675248 / C-130H Avionics Modernization Program (AMP) Increment 1					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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 1 EMD Contract	Various	TBD : TBD	-	0.290	Mar 2017	-		-		-		-	0.000	0.290	0.290
C-130H AMP Increment 1 Trainers/Training	TBD	TBD : TBD	-	-		-		5.500	Jan 2019	-		5.500	0.000	5.500	5.500
Subtotal			-	0.290		-		5.500		-		5.500	0.000	5.790	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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 1 Development Flight Test	Various	413 Flight Test Squadron : FL	-	1.057	Jul 2017	0.965	Feb 2018	-		-		-	0.000	2.022	2.022
Subtotal			-	1.057		0.965		-		-		-	0.000	2.022	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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 1 PMA Contractor Services	Various	Not Specified : TBD	-	1.382	Oct 2017	1.000	Mar 2018	0.364	Mar 2019	-		0.364	Continuing	Continuing	2.806
C-130H AMP Increment 1 PMA Government Cost	Various	Not specified. : TBD	-	5.692	Oct 2017	-		-		-		-	0.000	5.692	2.699
Subtotal			-	7.074		1.000		0.364		-		0.364	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	8.421		1.965		5.864		-		5.864	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force			Date: February 2018		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron			Project (Number/Name) 675248 / C-130H Avionics Modernization Program (AMP) Increment 1

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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 1																												
Milestone B																												
EMD Contract Awards																												
Design/Integration																												
Preliminary Design Review																												
Critical Design Review																												
Developmental Testing																												
Functional Configuration Audit																												
Milestone C																												
Force Development Evaluation (FDE)																												
Physical Configuration Audit (PCA)																												
Trainers & Training																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron	Project (Number/Name) 675248 / C-130H Avionics Modernization Program (AMP) Increment 1	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
C-130H AMP Increment 1				
Milestone B	2	2017	2	2017
EMD Contract Awards	2	2017	2	2017
Design/Integration	3	2017	3	2018
Preliminary Design Review	3	2017	3	2017
Critical Design Review	4	2017	4	2017
Developmental Testing	2	2018	3	2018
Functional Configuration Audit	4	2018	4	2018
Milestone C	4	2018	4	2018
Force Development Evaluation (FDE)	3	2018	4	2018
Physical Configuration Audit (PCA)	4	2018	4	2018
Trainers & Training	2	2019	1	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675250: C-130H Avionics Modernization Program (AMP) Increment 2	0.000	7.178	8.254	100.124	0.000	100.124	127.763	112.673	33.507	0.595	0.000	390.094
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 addresses select obsolescence and Diminishing Manufacturing Sources (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.

RDT&E efforts include but are not limited to software development, design, integration, development and operational test, 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.

The C-130H AMP Increment 2 program currently modifies 176 aircraft (166x C-130Hs and 10x LC-130Hs) consisting of H3s, H2.5s, H2s and H1s; and includes 131 Air National Guard aircraft, and 45 Air Force Reserve aircraft. The modification effort will have 4 prototype aircraft representative of variations in the mission designs and required for accomplishment of the Engineering and Manufacturing Development (EMD) phase with the remaining 172 aircraft modified in the production phase.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver C-130H weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

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

	FY 2017	FY 2018	FY 2019
Title: C-130H Avionics Modernization Program (AMP) Increment 2	7.178	8.254	100.124
Description: Refined and completed the requirements definition phase of the program, followed by integration planning and the Engineering and Manufacturing Development (EMD) phase activities.			
FY 2018 Plans: Continuation of EMD activities to include Source Selection and Milestone B activities.			
FY 2019 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force								Date: February 2018			
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			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019	
Milestone B, contract award and execution of EMD.											
FY 2018 to FY 2019 Increase/Decrease Statement: Funding increased \$91.870M (see above for details)											
Accomplishments/Planned Programs Subtotals								7.178	8.254	100.124	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APAF 05 Line Item C13000: C-130	-	-	-	-	-	-	61.297	164.524	229.971	Continuing	Continuing
• APAF 06 Line Item 000999: Initial Spares/Repair Parts	-	-	-	-	-	-	6.500	14.827	15.096	Continuing	Continuing
Remarks The C-130H Avionics Modernization Program (AMP) Increment 2 procurement funding begins in FY21.											
D. Acquisition Strategy C-130H AMP Increment 2 acquisition strategy intends to conduct a full and open competitive source selection followed by contract award. Current efforts are primarily focused on preparation for the Engineering and Manufacturing Development (EMD) source selection. The current schedule reflects EMD contract award in 1st quarter FY19.											
E. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force													Date: February 2018		
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					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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/Various	TBD : TBD	-	-		-		95.696	Dec 2018	-		95.696	Continuing	Continuing	358.025
Subtotal			-	-		-		95.696		-		95.696	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	TBD : TBD	-	-		1.100	Sep 2017	0.699	Mar 2019	-		0.699	Continuing	Continuing	22.600
Subtotal			-	-		1.100		0.699		-		0.699	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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 PMA Contractor Services	Various	Not Specified : TBD	-	7.078	Feb 2017	7.054	Mar 2018	3.629		-		3.629	Continuing	Continuing	31.700
C-130H AMP Increment 2 PMA - Government Cost	Various	Not Specified : TBD	-	0.100	Oct 2016	0.100	Oct 2017	0.100	Nov 2018	-		0.100	0.000	0.300	0.300
Subtotal			-	7.178		7.154		3.729		-		3.729	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	7.178		8.254		100.124		-		100.124	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force										Date: February 2018			
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 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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																												
Milestone B																												
EMD Contract Award																												
Design/Integration																												
Preliminary Design Review																												
Critical Design Review																												
Design/Integration Training Development																												
Development Testing																												
Functional Configuration Audit																												
Milestone C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
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
C-130H AMP Increment 2				
Milestone B	1	2019	1	2019
EMD Contract Award	1	2019	1	2019
Design/Integration	1	2019	3	2021
Preliminary Design Review	3	2019	3	2019
Critical Design Review	4	2019	4	2019
Design/Integration Training Development	2	2019	3	2021
Development Testing	3	2020	1	2023
Functional Configuration Audit	3	2021	3	2021
Milestone C	3	2021	3	2021