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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force **Date:** February 2016

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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	33.962	15.599	0.000	15.599	90.697	191.779	137.512	85.000	Continuing	Continuing
675248: <i>C-130H Avionics Modernization Program (AMP) Increment 1</i>	0.000	0.000	33.962	8.421	0.000	8.421	15.697	13.104	7.212	0.000	0.000	78.396
675250: <i>C-130H Avionics Modernization Program (AMP) Increment 2</i>	0.000	0.000	0.000	7.178	0.000	7.178	75.000	178.675	130.300	85.000	Continuing	Continuing

Note
 This program, BA 07 PE 0401115F, project 675250, C-130H Avionics Modernization Program (AMP) Increment 2, is a new start.

Project 675248 was renamed from "C-130H Viability and Airspace Access Program (VAAP) Increment 1" to "C-130H Avionics Modernization Program (AMP) Increment 1" starting in FY17.

A. Mission Description and Budget Item Justification

The FY 2017 funding was reduced by \$50.484M 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 will cover design, integration, developmental test, 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 design, integration, developmental test, 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 2017 Air Force	Date: February 2016
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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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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	33.962	58.905	0.000	58.905
Current President's Budget	0.000	33.962	15.599	0.000	15.599
Total Adjustments	0.000	0.000	-43.306	0.000	-43.306
• 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	-43.306	0.000	-43.306

Change Summary Explanation

FY17 includes a reduction of \$50.484M from "C-130H AMP Increment 1" to account for the availability of prior year execution balances.

Additionally, FY17 includes \$7.178M for "C-130H Avionics Modernization Program (AMP) Increment 2" new-start.

These two actions resulted in a total reduction of \$43.306M in FY17.

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force										Date: February 2016		
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
675248: C-130H Avionics Modernization Program (AMP) Increment 1	0.000	0.000	33.962	8.421	0.000	8.421	15.697	13.104	7.212	0.000	0.000	78.396
Quantity of RDT&E Articles	-	-	-	-	-	-	4	-	-	-	-	

Note

Project 675248 was renamed from "C-130H Viability and Airspace Access Program (VAAP) Increment 1" to "C-130H Avionics Modernization Program (AMP) Increment 1" starting in FY17.

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 will cover design, integration, developmental test, Type 1 training and C-130H aircrew and maintenance training systems and courseware development efforts (including MODE 5 effort for the trainers).

The C-130H AMP Increment 1 program modifies 172 aircraft (166x C-130Hs and 6x LC-130Hs) consisting of H3s, H2.5s, H2s and H1s; and includes 127 Air National Guard aircraft, and 45 Air Force Reserve aircraft. The modification effort will have up to 4 prototype aircraft representative of variations in the mission designs and required for accomplishment of the C-130H AMP Increment 1 Engineering and Manufacturing Development (EMD) phase. The remaining aircraft will be modified in the production phase.

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: C-130H AMP Increment 1	0.000	33.962	8.421	0.000	8.421
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 2015 Accomplishments: N/A					
FY 2016 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Documentation development, Request for Proposal (RFP) development and release, source selection and ramp up of Engineering and Manufacturing Development (EMD) phase activities. FY 2017 Base Plans: Continuation of EMD including Milestone B, Contract Award, Preliminary and Critical Design Reviews. FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.000	33.962	8.421	0.000	8.421

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017 Base</u>	<u>FY 2017 OCO</u>	<u>FY 2017 Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # C13000: C-130H Avionics Modernization Program (AMP) Increment 1	0.000	70.000	0.000	0.000	0.000	56.968	59.764	21.401	10.516	0.000	218.649

Remarks
C-130H AMP Increment 1 Procurement funding begins in FY18; however, the program also received a congressional add of \$70M APAF in FY16.

Additionally, the original C-130 AMP (mod # 8517) received a congressional add of FY15 \$35.8M APAF in FY15; based on the FY15 NDAA language, the AF is able to execute a portion of this funding for the C-130H AMP Increment 1 program.

D. Acquisition Strategy
C-130H AMP Increment 1 acquisition strategy (30 Sept 2015) is to conduct a full and open competitive source selection for ADS-B Out and Enhanced Mode S followed by a Federal Acquisition Regulation (FAR) Part 15 contract award. Current efforts are primarily defining the program requirements and pre-contract efforts in preparation for the Engineering and Manufacturing Development (EMD) source selection. The current schedule reflects EMD contract to be awarded in 2nd quarter FY17.

Based on congressional approval, the AF started C-130H AMP Increment 1 in FY15, with the following FY15 activities: Market research, acquisition strategy planning, and documentation development.

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 2017 Air Force												Date: February 2016			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0401115F / C-130 Airlift Squadron				675248 / C-130H Avionics Modernization Program (AMP) Increment 1							
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	C/Various	TBD : TBD	0.000	0.000		25.162	Mar 2017	0.000		0.000		0.000	Continuing	Continuing	40.375
C-130H AMP Increment 1 Trainers/Training	C/TBD	TBD : TBD	0.000	0.000		0.000		3.421	Mar 2017	0.000		3.421	Continuing	Continuing	16.521
Government Furnished Property	MIPR	TBD : TBD	0.000	0.000		0.800	Mar 2017	0.000		0.000		0.000	0.000	0.800	0.800
Subtotal			0.000	0.000		25.962		3.421		0.000		3.421	-	-	57.696
Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	MIPR	TBD : TBD	0.000	0.000		0.000		0.000		0.000		0.000	Continuing	Continuing	2.700
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	-	-	2.700
Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	0.000		6.000	Feb 2016	4.000	Feb 2017	0.000		4.000	Continuing	Continuing	14.000
C-130H AMP Increment 1 PMA - Government Cost	Various	Not Specified : TBD	0.000	0.000		2.000	Feb 2016	1.000	Feb 2017	0.000		1.000	Continuing	Continuing	4.000
Subtotal			0.000	0.000		8.000		5.000		0.000		5.000	-	-	18.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
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 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
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)															■													

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
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	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	2	2017	2	2017
EMD Contract Awards	2	2017	2	2017
Design/Integration	2	2017	2	2018
Preliminary Design Review	3	2017	3	2017
Critical Design Review	4	2017	4	2017
Developmental Testing	2	2018	4	2018
Functional Configuration Audit	3	2018	3	2018
Milestone C	4	2018	4	2018
Force Development Evaluation (FDE)	3	2018	4	2018
Physical Configuration Audit (PCA)	4	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force										Date: February 2016		
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
675250: C-130H Avionics Modernization Program (AMP) Increment 2	0.000	0.000	0.000	7.178	0.000	7.178	75.000	178.675	130.300	85.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	2	1	1		

Note

This program, BA 07 PE 0401115F, project 675250, C-130H Avionics Modernization Program (AMP) Increment 2, is a new start.

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.

RDT&E efforts include design, integration, developmental test, Type 1 training, and C-130H aircrew and maintenance training systems and courseware development efforts.

The C-130H AMP Increment 2 program modifies 172 aircraft (166x C-130Hs and 6x LC-130Hs) consisting of H3s, H2.5s, H2s and H1s; and includes 127 Air National Guard aircraft, and 45 Air Force Reserve aircraft. The modification effort will have 4 prototype aircraft required for accomplishment of the Engineering and Manufacturing Development (EMD) phase, with the remaining 168 being production aircraft. The prototype aircraft represent each type of C-130H configuration listed above.

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: C-130H Avionics Modernization Program (AMP) Increment 2	0.000	0.000	7.178	0.000	7.178
Description: Refine and complete the requirements definition phase of the program, followed by integration planning and the Engineering and Manufacturing Development (EMD) phase activities.					
FY 2015 Accomplishments: N/A					
FY 2016 Plans: N/A					
FY 2017 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
EMD activities including market research, documentation development, Request for Proposal (RFP) issuance, Source Selection and Milestone B preparation.					
FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	7.178	0.000	7.178

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• APAF: BA05: Line Item # C13000: C-130H Avionics Modernization Program (AMP) Increment 2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	117.613	197.750	Continuing	Continuing

Remarks
The C-130H Avionics Modernization Program (AMP) Increment 2 procurement funding begins in FY20.

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 defining the program requirements and pre-contract efforts in preparation for the Engineering and Manufacturing Development (EMD) source selection. The current schedule reflects EMD contract to be awarded in 2nd quarter FY18.

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 2017 Air Force												Date: February 2016				
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 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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/TBD	TBD : TBD, GA	0.000	0.000		0.000		0.000		0.000		0.000	Continuing	Continuing	460.256	
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	-	-	460.256	
Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	
Subtotal			-	-		-		-		-		-	-	-	-	
Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	C/TBD	TBD : TBD, GA	0.000	0.000		0.000		0.000		0.000		0.000	Continuing	Continuing	27.600	
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	-	-	27.600	
Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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, OH	0.000	0.000		0.000		7.178	Feb 2017	0.000		7.178	Continuing	Continuing	28.297	
Subtotal			0.000	0.000		0.000		7.178		0.000		7.178	-	-	28.297	
Project Cost Totals			0.000	0.000		0.000		7.178		0.000		7.178	-	-	516.153	

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
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 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021							
	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				
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 2017 Air Force		Date: February 2016
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	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	1	2018	1	2018
EMD Contract Award	2	2018	2	2018
Design/Integration	2	2018	4	2020
Preliminary Design Review	4	2018	4	2018
Critical Design Review	2	2019	2	2019
Design/Integration Training Development	2	2018	4	2020
Development Testing	4	2020	2	2021
Functional Configuration Audit	3	2021	3	2021
Milestone C	3	2021	3	2021