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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0401132F I C-130J Program							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	242.300	31.410	16.776	26.821	0.000	26.821	10.825	0.660	0.671	0.684	30.396	360.543
675061: C-130J	242.300	31.410	16.776	26.821	0.000	26.821	10.825	0.660	0.671	0.684	30.396	360.543
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Program MDAP/MAIS Code: 220												
A. Mission Description and Budget Item Justification												
The C-130J is a medium-sized transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J aircraft, with its extended (by 15 feet) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission compared with legacy C-130E/H and the C-130J (short). Special mission variants of the C-130J conduct airborne psychological operations (EC-130J), weather reconnaissance (WC-130J), search and rescue (HC-130J), and special operations (MC-130J and AC-130J). All aircraft variants must be capable of worldwide operations.												
This project provides RDT&E funding for required capabilities that are grouped as "Block" upgrades or "Capability" updates. Content/requirements for block modifications is documented in International Program Directives (IPDs) as determined in the Cooperative Systems and Software Upgrade Requirements Management (COSSURM) process. This project will integrate the common-core capabilities developed under this program into the HC-130J, MC-130J and AC-130J.												
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total				
Previous President's Budget				25.010	16.776	18.344	0.000	18.344				
Current President's Budget				31.410	16.776	26.821	0.000	26.821				
Total Adjustments				6.400	0.000	8.477	0.000	8.477				
• 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				6.400	0.000							
• SBIR/STTR Transfer				0.000	0.000							
• Other Adjustments				0.000	0.000	8.477	0.000	8.477				

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Change Summary Explanation In 2016 the Department inadvertently removed too much funding. A \$6.4M reprogramming was required to fully fund Block 8.1. The FY 2018 funding request was increased by \$8.4 million to fund the non-recurring engineering required to meet the January 2020 ADS-B Out mandate.						
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Cooperative Systems and Software Upgrade Requirements Management (COSSURM) Description: COSSURM - Collects potential requirements for inclusion into a Block Upgrade or Capability Management Update. FY 2016 Accomplishments: Funds sent to the United Kingdom for COSSURM support. FY 2017 Plans: Continuation of CMU COSSURM requirements review and analysis. FY 2018 Base Plans: Continuation of CMU COSSURM requirements review and analysis.		0.050	0.380	0.390	-	0.390
Title: Block 7.0 Description: BLOCK 7.0: Adds Link 16, a new Flight Management System (FMS), Civil Global Positioning System (GPS) Navigation, and a Special Mission Processor-Interface (SMP-I). Defense Contract Management Agency Support is included here. FY 2016 Accomplishments: Completed DO178B software testing. DO178B is the software certification standard for commercial aircraft.		0.300	-	-	-	-
Title: Block 8.1 Description: BLOCK 8.1 Adds Identification Friend or Foe (IFF) Mode 5, Civil Data Link, Automatic Dependent Surveillance - Broadcast (ADS-B), Air Traffic Services (ATS)/Airline Operational Control (AOC) Data Link for Line of Sight (LOS) and Beyond Line of Sight (BLOS) communication, enhanced covert lighting, improved Public Address(PA) System, and Approach Procedure with Vertical guidance (APV)/ Localizer Performance with Vertical guidance (LPV) approach capability. Several avionics platforms are impacted that include Flight Management System Software, Mission Computer Software, Bus Interface Unit software, and Maintenance Management System.		29.220	14.112	22.404	-	22.404

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
FY 2016 Accomplishments: Continued to work towards the completion of Block 8.1 Common Core hardware and software development and delta DT&E which is in progress. Initiated integration development for combined Block 7.0/8.1 TKI efforts, and continued to work towards installation of the Block 8.1 hardware TKI installation on the USAF short aircraft.						
FY 2017 Plans: Complete integration development for the combined Block 7.0/8.1 USAF stretch and short aircraft, continue integration development for the combined Block 7.0/8.1 follow on TKIs and continue the development of the Block 8.1 ADS-B Out.						
FY 2018 Base Plans: Continue the development of the Block 8.1 ADS-B Out.						
Title: Test & Evaluation Description: Test and evaluation planning, conduct, and support for developmental, and operational testing.		0.500	0.950	0.577	-	0.577
FY 2016 Accomplishments: Held a mission computer upgrade design review and completed ground and flight regression testing. Completed customer lab demo testing, and held an ACTFAST/TACC customer demo. Continued to work towards FCA/PCA completion.						
FY 2017 Plans: Block 8.1 DO178B/FMET testing to satisfy partner nation aircraft compliance will be completed. Continuation of test planning and support for follow on TKIs.						
FY 2018 Base Plans: Continuation of test planning and support for follow on TKIs.						
Title: Capability Management Update (CMU) Description: CMU's refine Block upgrade modifications that improve operational effectiveness, satisfy emerging operational needs, and enhance human machine interface (HMI) to allow a workload that meets human factors standards and maintains the present crew complement. Avionics software impacted includes Flight Management System (FMS) Software, Mission Computer (MC) Software, Bus Interface Unit (BIU) software, and Maintenance Management System. In addition, four Block 7.0 deficiencies were identified to be fixed within the CMU program; Autotune, Autothrottle, ICS ACAWS, and IFF Mode V.		0.220	0.583	2.950	-	2.950

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C. Accomplishments/Planned Programs (\$ in Millions)						FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	
FY 2016 Accomplishments: Common Core CMU 1.0 identified additional items based on Block 7.0 deficiencies and have been integrated into Final Qualification Testing 3 of the mission computer, and additional items such as TAWS database have be initiated.											
FY 2017 Plans: Continuation of Common Core software development.											
FY 2018 Base Plans: Continuation of Common Core software development.											
Title: Other AMC Inititatives						1.120	0.751	0.500	-	0.500	
Description: C-130J initiatives/studies.											
FY 2016 Accomplishments: Wheel/Brake System Improvement (WBSI) Brake Energy/Takeoff Landing Data (TOLD) Data Collection continued. Mission Planning software studies and updates continued.											
FY 2017 Plans: Continue Wheel/Brake System Improvement (WBSI) Brake Energy/Takeoff Landing Data (TOLD) Data Collection continue. Mission Planning software studies and updates continue.											
FY 2018 Base Plans: Complete Wheel/Brake System Improvement (WBSI) Brake Energy/Takeoff Landing Data (TOLD) Data Collection. Mission Planning software studies and updates continue.											
Accomplishments/Planned Programs Subtotals						31.410	16.776	26.821	-	26.821	
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• APAF: BA05: Line Item # C1300J: C-130J Mods	29.713	89.424	171.230	8.400	179.630	131.049	145.170	109.301	165.385	0.00	849.672
• APAF: BA 05: Line Item # C130J0: C-130J	0.000	0.000	10.727	0.000	10.727	10.920	12.254	12.496	12.774	0.000	59.171

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D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• APAF: BA02: Line Item # C130J0: C-130J	850.554	378.667	68.326	0.000	68.326	36.153	8.341	36.610	38.301	1,612.013	3,028.965
• APAF: BA07 Line Item # C130J0: C-130J	0.000	0.000	102.000	0.000	102.000	0.000	0.000	0.000	0.000	0.00	102.000
Remarks											
E. Acquisition Strategy											
<p>The C-130J aircraft will be modified using a "block upgrade" strategy. The CNS/ATM, navigation safety requirement will initially, be met in three block upgrades. Block 6.0 development was funded from FY03-07. Block 7.0 started in FY07, and Block 8.1 which began in FY12. Subsequently, C-130J modifications will be grouped into smaller CNS/ATM software only updates known as Capability Management Updates (CMU). Other AMC initiatives are upgrades to hardware and software that have arisen after the formation of the block upgrades and CMUs.</p> <p>In order to better manage the fleet and to avoid having to simultaneously support three separate aircraft configurations (Block 6, Block 7 and Block 8.1) the USAF has decided to combine the Block 7 and Block 8.1 mods. This will allow the aircraft and trainers to only have to be modified one time.</p> <p>The proportion of CNS/ATM and navigation safety requirements allocated to Blocks 6.0 through 8.1 was determined via a design trade study conducted by Lockheed Martin (the C-130J prime contractor) and verified by the C-130J system program office and AMC. The development costs are being shared via a global Project Arrangement (PA) by the United States (USAF, USMC, USCG), the United Kingdom, Italy, Australia, Denmark, Canada, and Norway. An international program office (IPO), with USAF lead (Wright Patterson AFB, OH), manages the block upgrades development effort. Retrofit of a Block on the aircraft is the responsibility of each nation.</p> <p>In order to meet the Federal Aviation Administration 2020 mandate the USAF will install the Block 8.1 ADS-B Out/Mode V IFF solution on all C-130J variants not scheduled to receive Block 8.1 by January 2020. This is Mod #8649, ADS-B Out Acceleration. All C-130Js will still require Block 8.1.</p>											
F. 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: FY 2018 Air Force **Date:** May 2017

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401132F / C-130J Program	Project (Number/Name) 675061 / C-130J
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Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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-130J Block 7.0, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Aeronautics : Marietta, GA	129.951	0.300	Nov 2015	0.000		0.000		0.000		0.000	0.000	130.251	129.503
C-130J Block 8.1, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Information Sytems : Marietta, GA	42.192	26.320	Apr 2016	11.957	Apr 2017	20.254	Apr 2018	0.000		20.254	25.698	126.421	180.030
C-130J Capability Management Upgrades (CMU) 1 & 2, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Aero : Marietta, GA	0.000	0.220	May 2016	0.583	May 2017	2.950	May 2018	0.000		2.950	12.900	16.653	6.480
C-130J AMC-Initiatives, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Aero : Marietta, GA	49.331	1.120	Feb 2016	0.746	Feb 2017	0.500	Feb 2018	0.000		0.500	4.629	56.326	14.730
Subtotal			221.474	27.960		13.286		23.704		0.000		23.704	43.227	329.651	330.743

Remarks
C-130J Block 8.1 Total Cost is below Target Value of Contract to account for the expected cost reduction initiatives on this Cost Plus Award Fee Contract.

Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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-130J Block 8.1 DT and E	PO	EGLIN AFB : Eglin, FL	0.000	0.500	Nov 2015	0.950	Nov 2016	0.577	Nov 2017	0.000		0.577	0.000	2.027	7.490
Subtotal			0.000	0.500		0.950		0.577		0.000		0.577	0.000	2.027	7.490

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force												Date: May 2017			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0401132F / C-130J Program				Project (Number/Name) 675061 / C-130J					
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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-130J IPO Support	TBD	N/A : TBD	5.008	2.900	Nov 2015	2.160	Nov 2016	2.150	Nov 2017	0.000		2.150	0.000	12.218	5.014
C-130J COSSURM	TBD	RAF : TBD	15.818	0.050	Jan 2016	0.380	Jan 2017	0.390	Jan 2018	0.000		0.390	0.000	16.638	2.443
Subtotal			20.826	2.950		2.540		2.540		0.000		2.540	0.000	28.856	7.457
Remarks															
The COSSURM contract is managed by the United Kingdom Royal Air Force (RAF)															
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			242.300	31.410		16.776		26.821		0.000		26.821	43.227	360.534	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force	Date: May 2017
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401132F / C-130J Program	Project (Number/Name) 675061 / C-130J
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	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	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
Block 8.1 Development																												
Block 8.1 Development Test & Evaluation																												
Block 8.1 FCA/ PCA (Functional & Physical Configuration Audit)																												
Block 7.0/ 8.1 Trial Kit Installation (TKI) 2 - 7																												
CMU #1																												

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401132F / C-130J Program	Project (Number/Name) 675061 / C-130J	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 8.1 Development	1	2016	4	2016
Block 8.1 Development Test & Evaluation	1	2016	1	2017
Block 8.1 FCA/ PCA (Functional & Physical Configuration Audit)	2	2016	1	2017
Block 7.0/ 8.1 Trial Kit Installation (TKI) 2 - 7	1	2016	1	2019
CMU #1	3	2016	2	2018