PE NUMBER: 0401132F
PE TITLE: C-130J PROGRAM

Exhibit R-2, RDT&E Budget Item Justification

DATE **February 2004**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0401132F C-130J PROGRAM

Cost ($ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	1.890	13.436	36.305	13.545	56.506	27.420	71.221	0.000	217.755
5061 C-130J	1.890	13.436	36.305	13.545	56.506	27.420	71.221	0.000	217.755

(U) A. Mission Description and Budget Item Justification

C-130J program RDT&E funding provides for:

1) Participation in the international Co-operative Systems and Software Upgrade Requirements Management (COSSURM). COSSURM participants include the United Kingdom, Australia, Italy, Denmark, and the United States. COSSURM provides a mechanism to jointly identify, collect, define, analyze and price requirements. By combining requirements and resources under COSSURM, each participating country will save in aircraft upgrade costs.

2) The development, integration, and testing of International Civil Aviation Organization (ICAO), Federal Aviation Administration (FAA), and DOD-mandated Global Air Traffic Management (GATM) and navigation safety (nav safety) capabilities for the C-130J weapon system.

3) The development, integration, and testing of aircraft modifications necessary to correct deficiencies identified in qualification and operational testing of this platform.

4) The development, integration, and testing of C-130J enhancements identified by Air Mobility Command (AMC), which is the USAF lead operating command for the C-130J weapon system.

The C-130J is a medium-size transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J-30 aircraft, with its extended (by 15 ft) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission. Special mission variants of the C-130J conduct airborne psychological operations (EC-130J) and weather reconnaissance (WC-130J). These aircraft must be capable of worldwide operations.

USAF C-130J aircraft, in their present Block 5.3 configuration, are partially GATM/nav safety compliant. Capabilities provided in the Block 5.3 configuration include Required Navigation Performance (RNP)-10 (miles), RNP-5, Basic Area Navigation (BRNAV), Traffic Alert and Collision Avoidance System (TCAS) Version 7.0, FM immunity for Instrument Landing System (aka protected ILS), and the aircraft communications system software necessary to operate VHF communications radios with 8.33 MHz frequency seperation.

These RDT&E funds will enable development, integration, and testing of the remaining GATM/nav safety requirements needed on USAF C-130J aircraft. These capabilities include RNP-4, RNP-1, Terrain Approach Warning System (TAWS), Selective Availability Anti-Spoofing Module (SAASM) Global Positioning System (GPS), Local Area Augmentation System (LAAS), Wide Area Augmentation System (WAAS), Mode Select (Mode S) Beacon Transponder System with data link capability and growth to Mode 5, Automatic Dependent Surveillance-Address (ADS-A), Automatic Dependent Surveillance-Broadcast (ADS-B), satellite communications (SATCOM) voice and data link capability, high frequency data link (HFDL), Controller-Pilot Data Link Communications (CPDLC), and AMC Mobility 2000 (M2K)

communications.

The current C-130J Operational Requirements Document (ORD), validated 17 Apr 99, identifies the GATM/nav safety requirements for the C-130J. Supplemental guidance for the various GATM/nav safety requirements is provided via numerous ICAO, FAA, and DOD standards. Where possible, the C-130J GATM/nav safety solution set will be common with other USAF/AMC weapon systems performing similar GATM/nav safety upgrades.

(U) B. Program Change Summary ($ in Millions)

		FY 2003	FY 2004	FY 2005
(U)	Previous President's Budget	9.300	13.551	37.800
(U)	Current PBR/President's Budget	1.890	13.436	36.305
(U)	Total Adjustments	-7.410	-0.115	
(U)	Congressional Program Reductions			
	Congressional Rescissions	-0.199	-0.115	
	Congressional Increases			
	Reprogrammings	-6.928		
	SBIR/STTR Transfer	-0.283		

(U) Significant Program Changes:

None

Exhibit R-2a, RDT&E Project Justification

DATE **February 2004**

BUDGET ACTIVITY **07 Operational System Development**

PE NUMBER AND TITLE **0401132F C-130J PROGRAM**

PROJECT NUMBER AND TITLE **5061 C-130J**

Cost ($ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
5061 C-130J	1.890	13.436	36.305	13.545	56.506	27.420	71.221	0.000	217.755
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

C-130J program RDT&E funding provides for:

1) Participation in the international Co-operative Systems and Software Upgrade Requirements Management (COSSURM). COSSURM participants include the United Kingdom, Australia, Italy, Denmark, and the United States. COSSURM provides a mechanism to jointly identify, collect, define, analyze and price requirements. By combining requirements and resources under COSSURM, each participating country will save in aircraft upgrade costs.

2) The development, integration, and testing of International Civil Aviation Organization (ICAO), Federal Aviation Administration (FAA), and DOD-mandated Global Air Traffic Management (GATM) and navigation safety (nav safety) capabilities for the C-130J weapon system.

3) The development, integration, and testing of aircraft modifications necessary to correct deficiencies identified in qualification and operational testing of this platform.

4) The development, integration, and testing of C-130J enhancements identified by Air Mobility Command (AMC), which is the USAF lead operating command for the C-130J weapon system.

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USAF C-130J aircraft, in their present Block 5.3 configuration, are partially GATM/nav safety compliant. Capabilities provided in the Block 5.3 configuration include Required Navigation Performance (RNP)-10 (miles), RNP-5, Basic Area Navigation (BRNAV), Traffic Alert and Collision Avoidance System (TCAS) Version 7.0, FM immunity for Instrument Landing System (aka protected ILS), and the aircraft communications system software necessary to operate VHF communications radios with 8.33 MHz frequency seperation.

These RDT&E funds will enable development, integration, and testing of the remaining GATM/nav safety requirements needed on USAF C-130J aircraft. These capabilities include RNP-4, RNP-1, Terrain Approach Warning System (TAWS), Selective Availability Anti-Spoofing Module (SAASM) Global Positioning System (GPS), Local Area Augmentation System (LAAS), Wide Area Augmentation System (WAAS), Mode Select (Mode S) Beacon Transponder System with data link capability and growth to Mode 5, Automatic Dependent Surveillance-Address (ADS-A), Automatic Dependent Surveillance-Broadcast (ADS-B), satellite communications (SATCOM) voice and data link capability, high frequency data link (HFDL), Controller-Pilot Data Link Communications (CPDLC), and AMC Mobility 2000 (M2K) communications.

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0401132F C-130J PROGRAM	PROJECT NUMBER AND TITLE 5061 C-130J

The current C-130J Operational Requirements Document (ORD), validated 17 Apr 99, identifies the GATM/nav safety requirements for the C-130J. Supplemental guidance for the various GATM/nav safety requirements is provided via numerous ICAO, FAA, and DOD standards. Where possible, the C-130J GATM/nav safety solution set will be common with other USAF/AMC weapon systems performing similar GATM/nav safety upgrades.

	B. Accomplishments/Planned Program ($ in Millions)	FY 2003	FY 2004	FY 2005
(U)	COSSURM payment	1.890	0.000	1.441
(U)	Initiate non-recurring engineering design and software development for GATM/nav safety requirements and aircraft deficiencies/product improvements.		13.436	
(U)	Continue non-recurring engineering design and software development. Conduct laboratory testing of GATM/nav safety hardware and software modifications. Procure and install hardware on flight test aircraft and one C-130J weapon system trainer.			34.864
(U)	Total Cost	1.890	13.436	36.305

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

		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
(U)	Other APPN									
(U)	PE 0401132F, C-130J Procurement (BP1100)									
(U)	Mod MN-_1701 Blk 6.0			9.800	21.573	29.551	18.419	2.000	0.000	81.343
(U)	Mod MN-_6298 Blk 7.0					7.000	18.751	43.875	45.725	115.351
(U)	Mod MN-_5222 Blk 8.0							15.223	154.925	170.148

(U) D. Acquisition Strategy

C-130J aircraft will be modified using a 'block upgrade' strategy. The full GATM/nav safety requirement will be met in four block upgrades: Block 6.0, which begins with FY04 RDT&E funding and continues with FY05 RDT&E funding, Block 7.0, which will start in FY06, Block 8.0, which will start in FY08, and Block 9.0, which will start in FY10. The proportion of GATM/nav safety requirements allocated to Blocks 6.0 thru 9.0 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.

Lockheed Martin will be the prime contractor for these efforts, perform the non-recurring engineering and, following the successful conclusion of flight testing and certification of each block upgrade, will provide production retrofit kits on USAF C-130J aircraft. Installation will be performed by contractor, depot, and Air Force personnel.

Exhibit R-3, RDT&E Project Cost Analysis

DATE **February 2004**

BUDGET ACTIVITY **07 Operational System Development**

PE NUMBER AND TITLE **0401132F C-130J PROGRAM**

PROJECT NUMBER AND TITLE **5061 C-130J**

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
Aeronautical Systems Center (AFMC), WPAFB, OH	CPFF	Lockheed Martin Aeronautics, Marietta GA				13.436	Mar-04	31.864	Nov-04		45.300	
Subtotal Product Development			0.000	0.000		13.436		31.864		0.000	45.300	0.000
Remarks:												
(U) Support												
TBD											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Test & Evaluation												
Air Force Materiel Command (DT&E)								3.000	Mar-05		3.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		3.000		0.000	3.000	0.000
Remarks:												
(U) Management												
COSSURM				1.890				1.441	Nov-04		3.331	
Subtotal Management			0.000	1.890		0.000		1.441		0.000	3.331	0.000
Remarks:												
(U) Lockheed Martin Aeronautics, Marietta, GA												
(U) Total Cost			0.000	1.890		13.436		36.305		0.000	51.631	0.000
Remarks:												

Exhibit R-4, RDT&E Schedule Profile		DATE February 2004
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0401132F C-130J PROGRAM**	PROJECT NUMBER AND TITLE **5061 C-130J**

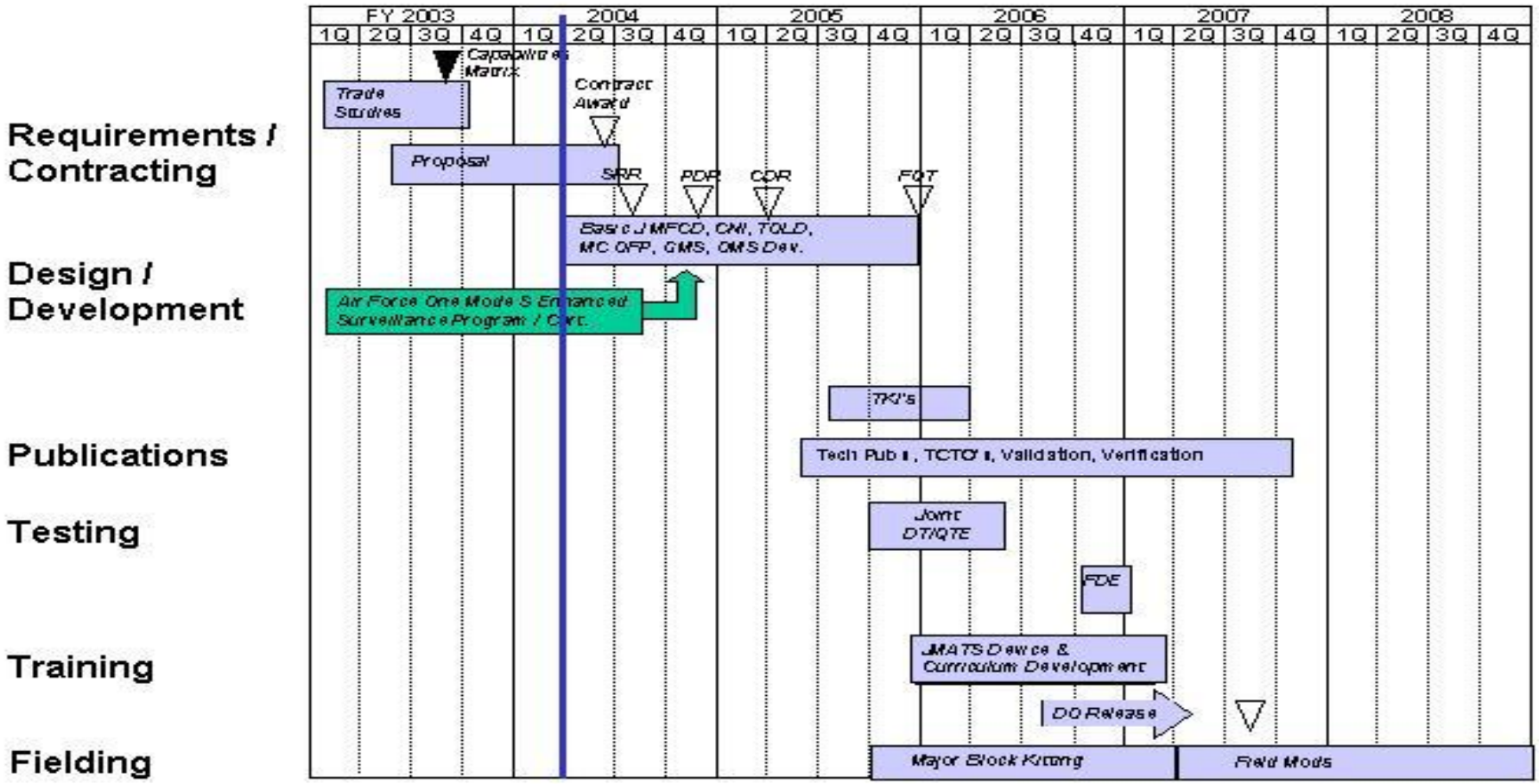

Exhibit R-4a, RDT&E Schedule Detail

DATE
February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0401132F C-130J PROGRAM**	**5061 C-130J**

(U) Schedule Profile	FY 2003	FY 2004	FY 2005
(U) Block 6.0 FY04 contract award		2Q	
(U) Block 6.0 FY05 contract award			1Q
(U) Block 6.0 DT&E payment to AFFTC			2Q
(U) Start of Block 6.0 DT&E			4Q