RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: February 2002

BUDGET ACTIVITY: 07 - Operational System Development

PE NUMBER AND TITLE: 0207133F F-16 SQUADRONS

PROJECT: 2671

COST ($ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2671	F-16 Squadrons	114,712	113,959	81,338	71,872	97,082	93,910	102,107	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 25-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as defense suppression, armed reconnaissance, close air support, combat air patrol, forward air control, and battle air interdiction (day/night and all-weather). Also during these years the aircraft has evolved in its capabilities to exploit the advances made in computer, avionics systems, engine, and structures technologies. The F-16 has been selected by 20 air forces around the world. USAF and foreign military sales production will continue well into the 21st century. The F-16 System Program Office (SPO) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

The F-16 program develops enhanced combat capability in both the air-to-ground and air-to-air role. Several modifications to improve the F-16's combat capabilities have been combined into a single modification known as the Common Configuration Implementation Program (CCIP) to save significant costs during the production phase. CCIP will modify all Block 40 and Block 50 F-16 aircraft; Block 50 is the lead platform. CCIP integrates several programs under one umbrella and allows incorporation of Link 16, Joint Helmet Mounted Cueing System (JHMCS), and Air-to-Air Interrogator (AAI) onto the F-16:

a. The main driver for CCIP will be the Link 16 program. Link 16 is a data link that connects main components of a battle arena to maintain awareness and to share battle management data. The Link 16 program designs the appropriate Group A (hardware mounted permanently on aircraft) to incorporate existing Group B (hardware that is easily removed from airplane) developed by the Multifunctional Information Distribution System (MIDS) Office and adapted for use on the F-16.

b. To enhance the display of the Link 16 data, the current black and white display will be replaced with the Color Multifunction Display (CMFD) used by the European Participating Air Force's (EPAF) F-16s.

c. To have sufficient computing power in the Block 40/50 aircraft to operate Link 16 and to allow the cost savings by using a common Operational Flight Program, the General Avionics Computer (GAC) must be replaced with the Modular Mission Computer (MMC). The MMC is an upgraded version of the computer that was developed for the EPAF Mid-life Update program. The F-16 SPO is developing the MMC for USAF requirements. The MMC will extend the cost effective life of the F-16 through replacement of three Line Replaceable Units and the addition of significant memory and processing growth provisions.

d. JHMCS incorporates a man-mounted, ejection capable helmet mounted display system, with the capability to cue and verify cueing of high off-axis sensors and

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(U) A. Mission Description Continued

weapons. The F-16 JHMCS program will integrate the following government furnished equipment with the F-16: flight helmet with display optics, image source, helmet tracker transducer w/attached cable, graphics processor/video hardware and software to drive the display, helmet tracker hardware and software. The integration will interface with aircraft computers, weapons and sensor hardware and will provide software to integrate the JHMCS functions with other onboard systems.

Other modifications which are being or will be developed during the FYDP:

a. Advanced Weapons Integration will integrate Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW) and Wind Corrected Munition Dispenser (WCMD) smart weapons into the Block 40 and Block 50 F-16.

b. Global Positioning System (GPS) Integration adds GPS capability to the Block 30 and supports testing of GPS changes to other F-16 Blocks. The F-16 development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests.

c. Integrate a targeting pod on the Block 50/52 and transition the HARM Targeting System (HTS) pod to the left inlet hardpoint. This will allow the F-16 Block 50 to perform the SEAD/DEAD mission.

d. The Mark XII IFF system (Air-to-Air Interrogator) consists of a single unit interrogator/transponder, a beam forming network, fuselage-mounted array antenna elements, and a lower interrogator antenna. The system provides a higher reliability rate and increases performance over present systems. Initial capabilities include coverage of + or - 60 degrees azimuth and elevation coverage with a + or - 2 degree accuracy, a range accuracy of 152 meters and range of 100 nmi. 32 in beam targets can be handled. Modes 1, 2, 3/A, C, S, and 4 are available.

e. Structural analysis from the on-going Structural Integrity Program (SIP) has indicated that the F-16 is experiencing structural fatigue that will impact the ability of the airframes to reach their 8,000 hrs service life. RDT&E funds are required to design the required structural modifications, as appropriate for each F-16 Block of aircraft. Falcon STAR development costs will be shared with the Multi-National Fighter Program (MNFP) countries.

(U) FY 2001 ($ in Thousands)

(U)	$6,985	Continue Block 40 Link 16
(U)	$6,392	Continue Block 40 JHMCS
(U)	$2,067	Continue Block 40 Color Display Development/Integration
(U)	$6,899	Continue Block 40 MMC
(U)	$7,216	Complete Training Devices
(U)	$53,184	Continue OFP Updates
(U)	$31,237	Continue Flight Tests DT&E
(U)	$3,300	Initiate Block 50 HTS/TGP Capability (Software development, design, test assets)

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(U) A. Mission Description Continued

(U) FY 2001 ($ in Thousands) Continued

(U)	$1,395	Initiate Falcon STAR (Structural analysis and design)
(U)	($3,963)	Initiate Onboard Oxygen Generator System (OBOGS) Retrofit
(U)	$114,712	Total

(U) FY 2002 ($ in Thousands)

(U)	$3,800	Complete Block 40 Link 16
(U)	$3,600	Complete Block 40 JHMCS
(U)	$1,200	Complete Block 40 Color Display Development/Integration
(U)	$2,000	Complete Block 40 MMC
(U)	$59,494	Continue OFP Updates
(U)	$30,848	Continue Flight Tests DT&E
(U)	$2,717	Complete Block 50 HTS/TGP Capability (Software development, design, test assets)
(U)	$6,000	Continue Falcon STAR (Structural analysis and design)
(U)	$4,300	Distributed Training Centers
(U)	$113,959	Total

(U) FY 2003 ($ in Thousands)

(U)	$54,621	Continue OFP Updates
(U)	$21,717	Continue Flight Tests DT&E
(U)	$5,000	Continue Falcon STAR (Structural analysis and design)
(U)	$81,338	Total

(U) B. Budget Activity Justification

Since the development activities in this PE support an operational aircraft, these development activities are funded in the Operational System Development budget activity 7.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
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(U) C. Program Change Summary ($ in Thousands)

		FY 2001	FY 2002	FY 2003	Total Cost
(U)	Previous President's Budget	122,767	110,797	81,620	TBD
(U)	Appropriated Value	123,903	110,797		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,136	-1,138		
	b. Small Business Innovative Research	-4,265			
	c. Omnibus or Other Above Threshold Reprogram	-4,182			
	d. Below Threshold Reprogram	392			
	e. Rescissions				
(U)	Adjustments to Budget Years Since FY 2002 PBR		4,300	-282	
(U)	Current Budget Submit/FY 2003 PBR	114,712	113,959	81,338	TBD

(U) Significant Program Changes:

FY01: $4,000 Congressional plus up for OBOGS retrofit, $5,000 Congressional reduction for AGCAS
FY01:($3,963) OBOGS Deduction
FY01: $3,000 Reprogramming
FY01: ($1,000) Inflation charges
FY02: ($1,085) Congressional reduction
FY02: ($53)RDT&E General reduction

FY02: ($4,300) Distributed Training Centers
FY03: ($84) Reduction in program support
FY03: ($198) Inflation charges

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(U) D. Other Program Funding Summary ($ in Thousands)

		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
(U)	Aircraft Procurement (3010F), Line Item 5; F-16 C/D (MYP)*	120,723	0	0	229,317	239,280	0	0		TBD
(U)	Aircraft Procurement (3010F), Line Item 34, F-16 Mods	306,205	238,962	277,194	293,180	258,904	272,678	242,625		TBD
(U)	Aircraft Procurement (3010F), Line Item 73, Post Production Support	31,176	18,522	14,422	12,496	12,973	13,571	12,696		TBD

* 3010F, Line Item 5 Program Funding for FY00, FY04, FY05, is for force structure aircraft, 10 A/C in FY 00, 6 A/C in FY04 and 6 A/C in FY05. The procurement of 4 Blk 50 aircraft in FY01 is for attrition reserve aircraft.

(U) E. Acquisition Strategy

The procurement of 22 (30 required) additional Blk 50/52 aircraft, 10 A/C in FY 00, 6 A/C in FY04 and 6 A/C in FY05, for the active force will enable the AF to replace the Blk 10/15 F-16 A/B aircraft of two Air National Guard (ANG) Air Defense Fighter (ADF) squadrons with newer, more capable Blk 30 F-16 C/D aircraft from the active fleet. The procurement of 4 Blk 50 aircraft in FY01 is for attrition reserve aircraft. RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. The approach to contracting varies by individual project. Lockheed Martin Aeronautics Company (LM Aero) is the prime contractor on all systems except the simulator/trainer (Hughes Co.), the 110 Engines (General Electric), and the 229 Engines (Pratt & Whitney). Contract types are CPIF, CPFF, FFP.

(U) F. Schedule Profile

		FY 2001				FY 2002				FY 2003			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	Contract Milestone												
(U)	Initiate Block 50 HTS/TGP Capability			*									
(U)	Inititate Falcon STAR		*										
(U)	Complete Block 40 MMC/Color Display								X				
(U)	Complete Block 40 Link 16/JHMCS								X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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(U) A. Project Cost Breakdown ($ in Thousands)

		FY 2001	FY 2002	FY 2003
(U)	Link 16 Block 50	0	0	0
(U)	Link 16 Block 40	6,985	3,800	0
(U)	MMC Block 40	6,899	2,000	0
(U)	Color Display Block 40	2,067	1,200	0
(U)	JHMCS Block 50	0	0	0
(U)	JHMCS Block 40	6,392	3,600	0
(U)	Training Devices	7,216	0	0
(U)	Block 30 GPS Integration	0	0	0
(U)	OFP Updates (Includes AAI)	53,184	59,494	54,621
(U)	Flight Tests DT&E	31,237	30,848	21,717
(U)	Block 50 HTS/TGP Capability (Software development, design, test assets)	3,300	2,717	0
(U)	Falcon STAR (Structural analysis and design)	1,395	6,000	5,000
(U)	OBOGS Retrofit	-3,963	0	0
(U)	Distributed Training Centers		4,300	
(U)	Total	114,712	113,959	81,338

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

(U) Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 2001	Budget FY 2001	Budget FY 2002	Budget FY 2003	Budget to Complete	Total Program
Product Development Organizations										
CCIP (LM Aero)	T&M	Feb 97	5,384	5,384	5,384	0	0	0	0	5,384
Link 16 Blk 50 (LM Aero)	SS/CPIF	Apr 98	30,347	30,347	20,256	0	0	0	0	20,256
Link 16 Blk 40 (LM Aero)	SS/CPIF	Apr 98	20,281	20,281	7,252	6,985	3,800	0	0	18,037
MMC Blk 50 (LM Aero)	SS/CPIF	Jan 92	172,222	172,222	172,222	0	0	0	0	172,222

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(U) Performing Organizations Continued:

Product Development Organizations										
MMC Blk 40 (LM Aero)	SS/CPIF	Apr 98	26,483	26,483	12,800	6,899	2,000	0	0	21,699
CMFDS Blk 50 (LM Aero)	SS/CPIF	Apr 98	650	650	650	0	0	0	0	650
CMFDS Blk 40 (LM Aero)	SS/CPIF	Apr 98	8,674	8,674	5,505	2,067	1,200	0	0	8,772
JHMCS Blk 50 (LM Aero)	SS/CPIF	Apr 98	9,231	9,231	4,950	0	0	0	0	4,950
JHMCS Blk 40 (LM Aero)	SS/CPIF	Apr 98	14,209	14,209	2,205	6,392	3,600	0	0	12,197
JHMCS Study (LM Aero)	SS/CPFF	Apr 98	4,458	4,458	4,458	0	0	0	0	4,458
AIM/9X (LM Aero)	CPAF	Apr 98	115	115	115	0	0	0	0	115
AAI Blk 50 (LM Aero)	SS/CPIF	Aug 99	5,336	5,336	1,020	0	0	0	0	1,020
Trainers (Hughes)	FFP	Apr 97	44,979	44,979	18,591	7,216	0	0	0	25,807
Smart Wpns (LM Aero)	CPIF	Dec 95	9,915	9,915	9,915	0	0	0	0	9,915
GPS Integration (Various)	Various	Jul 97	19,248	19,248	18,645	0	0	0	0	18,645
OFP Updates (LM Aero)	CPIF/T&M	Dec 95			153,746	53,184	59,494	54,621		321,045
IDM Blk 42 (LM Aero)	FP	Nov 98	630	630	630	0	0	0	0	630
LANTIRN BDA			100	100	100	0	0	0	0	100
Block 50 HTS/TGP			5,967	5,967	0	3,300	2,717	0	0	6,017
Falcon STAR	FFP	Mar 01	17,500	17,500	0	1,395	6,000	5,000	5,000	17,395
OBOGS Retrofit	TBD	TBD	TBD	TBD	0	-3,963	0	0	0	-3,963
ALE-50			1,400	1,400	1,400	0	0	0	0	1,400
Support and Management Organizations										
Radar Eval					280	0	0	0	0	280
Halon Eval					40	0	0	0	0	40
Test and Evaluation Organizations										
600 Gallon Tank					2,296	0	0	0	0	2,296
Distributed Training Centers							4,300			4,300
Flight Tests					150,586	31,237	30,848	21,717		234,388
F-16 Y2K Demo			850	850	850	0	0	0	0	850

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Subtotals	Total Prior to FY 2001	Budget FY 2001	Budget FY 2002	Budget FY 2003	Budget to Complete	Total Program
Rescission						
Subtotal Product Development	439,844	83,475	78,811	59,621	5,000	666,751
Subtotal Support and Management	320	0	0	0	0	320
Subtotal Test and Evaluation	153,732	31,237	35,148	21,717	0	241,834
Total Project	593,896	114,712	113,959	81,338	5,000	908,905