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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force **Date:** February 2015

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 0207133F / <i>F-16 Squadrons</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	109.887	133.105	148.297	-	148.297	141.118	123.679	116.082	116.461	Continuing	Continuing
672671: <i>F-16 Squadrons</i>	-	109.887	133.105	148.297	-	148.297	141.118	123.679	116.082	116.461	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier fixed-wing, high performance, single engine multi-mission fighter aircraft that comprises 50% of the AF fighter inventory. Operational since 1980, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions, such as, offensive and defensive counter-air, close air support, forward air control, air interdiction (day/night and all-weather) and suppression of enemy air defenses (SEAD)/destruction of enemy air defenses (DEAD). The F-16 remains the USAF's primary SEAD/DEAD platform. The aircraft has evolved its capabilities by capitalizing upon advancements made in computers, avionics systems, engines, and structures technologies to meet emerging warfighter requirements; and combat current and evolving enemy threats. The F-16 has been selected by more than 20 air forces around the world and foreign military sales (FMS) production continues in the 21st century. The F-16 System Program Office continues to develop, integrate, and qualify systems/subsystems to enhance the overall performance of the F-16 weapon system to meet new mission requirements.

Some of these include: Operational Flight Program (OFP) development on Block 40/42/50/52 OFPs are required to integrate new precision weapons, advanced targeting pods, improved avionics, hardware (HW) and software (SW) mods to meet DoD mandates and keep the F-16, the respective training simulators, and other hardware subsystems current; Legacy Service Life Extension Program (SLEP) is a two-phased RDT&E effort which includes a Full Scale Durability Test (FSDT) and Engineering, Manufacturing and Development (EMD) to support structural modifications to Block 40/42/50/52 aircraft to increase Certified Service Life (CSL) from 8,000 Equivalent Flight Hours (EFH) to 10,000 EFH (Threshold), or 12,000 EFH (Objective); EMD Hardware/Advanced capability improvements provides funding to develop, test, and qualify, weapon systems, aircraft subsystems replaced or modified due to requirements changes, pre-planned product improvements (P3I), diminishing manufacturing sources (DMS) and parts obsolescence; Modular Mission Computer (MMC)/Display Generator Upgrade resolves short falls in mission computer memory and throughput brought on by the addition of incremental combat capability and includes non-recurring engineering (NRE), design, development, integration, and ground/flight test for fielding; F-16 Training Simulator updates enable the USAF to exercise/train using the most current F-16 OFP available to all block configurations, to include both aircrew and maintenance trainers; JASSM-ER (Extended Range) integrates this advanced weapon on F-16 Blk 40/42/50/52 aircraft, and includes NRE, test assets, SEEK EAGLE, integration, and flight test.

This program is in Budget Activity 7, Operational System Development because it 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.

The FY2016 funding request was reduced by \$18.524 million to account for the availability of prior year balances.

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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	112.667	133.105	162.877	-	162.877
Current President's Budget	109.887	133.105	148.297	-	148.297
Total Adjustments	-2.780	-	-14.580	-	-14.580
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.780	-			
• Other Adjustments	-	-	-14.580	-	-14.580

Change Summary Explanation

FY2014: \$2.8M reduction due to SBIRS.

The FY2016 funding request was reduced by \$18.524 million to account for the availability of prior year balances.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
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Title: OFP Updates Blk 40-52 OFP	71.715	68.964	81.473
Description: OFP M-tapes are updated continually to integrate new weapons, targeting pods, and improved avionics. M6.2+ fielded in FY 2014. M6.5+/M7+ is in Phase III development with M6.5+ common candidates to include Universal Armament Interface (UAI) and Embedded GPS/INS (EGI) updates and M7+ candidates to include AIM-9X Block II. The USAF M6.5+ OFP is not intended to field and is the baseline for the Ogden Air Logistics Complex developed M7+ which will field in FY 2016. M7.2+ OFP is in the early stages of planning and candidate definition to incorporate DoD mandates. M8+ is in the early stages of planning and will incorporate the MMC upgrade architecture and Display Generator Upgrade. The OFP effort also contains Program Management Administration (PMA) support activities to include travel, office supplies, training courses, Video Teleconferencing (VTC) and support contractors.			
FY 2014 Accomplishments: Completed DT/OT and fielded M6.2+ Tape in FY 2014 which incorporated Auto GCAS. Continued M7+ OFP baseline development which incorporates M6.5+ candidates as part of final design, code and unit test and complete Software Integration Lab (SIL) testing. M7.2+ completed Multi-Stage Cockpit Review Team (MCRT)#1 with the user for planning and candidate			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>definition of DoD mandates as well as candidates for color display and advanced Defensive EW Systems. M8+ begins assessment for incorporating MMC upgrade architecture and Display Generator upgrade. Continued PMA support activities.</p> <p>FY 2015 Plans: M7+ OFP starts DT efforts. M7.2+ will conduct MCRT #2 and #3 for OFP candidate finalization and begin design and code of candidate development. Initiate procurement of M7.2+ test assets to meet OFP Mandates. M8+ will continue assessment for incorporating MMC upgrade architecture, Display Generator Upgrade and other discretionary candidates. Continue PMA support activities.</p> <p>FY 2016 Plans: M7+ completes DT/OT and fields in FY 2016. M7.2+ continues design and code of candidate development. Finalize procurement of M7.2+ test assets to meet OFP Mandates. M8+ starts SW design and code for rehosting MMC upgrade architecture and Display Generator Upgrade, begins assessment for Design Try Out (DTO) test planning, initiate procurement of test assets. Continue PMA support activities.</p>				
<p>Title: Flight Test</p> <p>Description: Development Test and Evaluation (DTE) at Edwards AFB and Development Test/Operational Test (DT/OT) at Eglin AFB including integration test of associated subsystems and weapons as well as maintain test schedule for F-16 Block 40-52 MMC OFPs, weapons integration, and sub-systems to ensure capabilities meet CAF's fielding schedule.</p> <p>FY 2014 Accomplishments: Completed Force Development Evaluation (FDE) for M6.2+.</p> <p>FY 2015 Plans: Continue supporting DTE Infrastructure. Start M7+ DTE testing.</p> <p>FY 2016 Plans: Continue supporting DTE infrastructure. Completes M7+ DT/OT testing, initiate M8+ DTO test planning. Support out-of-cycle regression testing.</p>		13.521	19.647	17.600
<p>Title: Legacy Service Life Extension Program (SLEP) Structures</p> <p>Description: F-16 Legacy Service Life Extension Program (SLEP): A two-phased RDT&E effort which includes Full Scale Durability Test (FSDT) and Engineering, Manufacturing and Development (EMD) to support structural modifications to Block 40/42/50/52 F-16 aircraft to increase service life. FSDT is required to prove finite element models and to develop the airworthiness certification basis to extend the current Certified Service Life from 8,000 Equivalent Flight Hours (EFH) to 10,000</p>		16.181	16.002	27.977

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>EFH (Threshold), or 12,000 EFH (Objective). SLEP EMD develops the engineering solutions necessary to resolve the life-limiting structural issues defined in FSDT and develop the airworthiness certification recommendation.</p> <p>FY 2014 Accomplishments: Completed System Requirements Review (SRR), which establishes initial technical baseline. Preliminary Design Review (PDR) 1 completed on 7 of 13 proposed modifications. Additional key activities include: repair and tool design engineering, kit definition, and source data development for TO, TCTO, and kit proof planning. Began production phase market research and acquisition strategy development efforts.</p> <p>FY 2015 Plans: FSDT concludes with the completion of cycle testing, aircraft teardown, inspection, final report and recommendation. Pre-EMD risk reduction activities conclude and final requirements defined with completion of PDR 2 and Critical Design Review (CDR) 1. Milestone B approval is planned in 4Q FY 2015. EMD activities finalize engineering designs and analysis of kits and tooling, TO and TCTOs, and procurement of long-lead items to support Kit Proof in FY 2016. Completion allows for release of preliminary Technical Data Package to support initial production acquisition activities and release of a draft Request for Proposal (RFP). Production phase market research, Early Strategy and Issues Session (ESIS) briefs, and acquisition strategy development continue.</p> <p>FY 2016 Plans: Receive final FSDT tear-down report and submit airworthiness Compliance Report for Kit Proof aircraft. Kit Proof starts and Draft RFP is planned for release to industry.</p>				
<p>Title: EMD HW/Advanced Capabilities Improvements</p> <p>Description: Funding to develop, test, and qualify aircraft weapons systems including F-16 subsystems replaced or modified due to requirements changes, P3I and DMS and parts obsolescence.</p> <p>FY 2014 Accomplishments: Supported development, test, and qualification of aircraft weapons systems for Advanced Identification Friend or Foe (IFF) requirement to procure and install Mode 5 on five test aircraft at Nellis AFB.</p> <p>FY 2015 Plans: Continued support to develop, test, and qualify aircraft weapons systems including F-16 subsystems replaced or modified due to requirements changes, P3I, DMS and/or parts obsolescence.</p> <p>FY 2016 Plans:</p>		0.470	0.500	0.200

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue support to develop, test, and qualify aircraft weapons systems including F-16 subsystems replaced or modified due to requirements changes, P3I, DMS and/or parts obsolescence.				
<p>Title: MMC Upgrade / Display Generator Upgrade</p> <p>Description: The MMC upgrade resolves short falls in mission computer memory and throughput. Funding includes NRE, design, development, integration, and ground/flight test for fielding with the M8+ OFP. The addition of an Ethernet port facilitates future increments of combat capability with the OFP (e.g., digital targeting pod video). Display Generator Upgrade allows a fully integrated Multifunction Display solution including Hands On Throttle and Stick (HOTAS) integration with Sensor of Interest (SOI), format swapping and high definition video on 4x4 displays; provides improved display formats during dynamic maneuvers; resolves symbol freezing issues due to throughput constraints; and provides a sustainable approach to address growing DMS concerns with the current Programmable Display Generator.</p> <p>FY 2015 Plans: Initiate contract activities for NRE, MMC and Display Generator Upgrade asset procurement, design, development, integration, and ground/flight test for fielding with the M8+ OFP.</p> <p>FY 2016 Plans: Continue contracting activities for NRE, MMC and Display Generator Upgrade asset procurement, design, development, integration, and ground/flight test for fielding with the M8+ OFP.</p>		-	19.992	14.497
<p>Title: JASSM-ER</p> <p>Description: Integrates JASSM-ER on F-16 Blk 40/42/50/52 aircraft, including NRE, SEEK EAGLE, test assets, integration, and flight test. This capability will be fielded in conjunction with a future OFP delivery.</p> <p>FY 2014 Accomplishments: Began NRE contract efforts for procurement of SEEK EAGLE test assets and integration on F-16 Blk 40/42/50/52 aircraft.</p> <p>FY 2015 Plans: Continue NRE development efforts and procure test assets for integration of JASSM-ER capability on F-16 Blk 40/42/50/52 aircraft.</p> <p>FY 2016 Plans: Continue NRE development efforts for integration of JASSM-ER capability on F-16 Blk 40/42/50/52 aircraft.</p>		8.000	8.000	4.500
Title: Simulator Trainers		-	-	2.050

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>Description: Enables the USAF to exercise and train using the latest F-16 capabilities available to Block 40/42/50/52 aircraft configurations, while reducing the overall cost of maintenance and aircrew training. In order to maintain concurrency with the aircraft OFP, this funding supports development, test, and integration of simulator upgrade efforts. This effort was previously included within the OFP Updates in the FY15 President's Budget and is not an FY 2016 New Start.</p> <p>FY 2016 Plans: Contract efforts for managing, maintaining, supporting to include tech order data for F-16 Simulator trainers to include both aircrew and maintenance trainers. This funding supports development, test, and integration of simulator upgrade efforts, such as OFP development.</p>			
Accomplishments/Planned Programs Subtotals	109.887	133.105	148.297

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016	FY 2016	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
			Base	OCO	Total						
• APAF: BA05: Line Item # F01600: <i>Modifications, PE 0207133F</i>	9.334	9.042	17.134	-	17.134	34.273	73.271	110.079	138.153	Continuing	Continuing
• APAF: BA07: Line Item # F01600: <i>Post Production Support, PE 0207133F</i>	3.238	9.994	14.969	-	14.969	15.290	15.583	15.849	16.245	Continuing	Continuing

Remarks

E. Acquisition Strategy

The F-16 Program acquisition strategy is to improve capability, maintenance and safety mods through OFP development/flight test, enhanced weapons integration, structural upgrades, and simulator concurrency.

OFP software will be continually updated on a 3-year cycle to bring new capabilities to the warfighter. The current effort (M7+) is the first software tape to be completely developed at OO-ALC vs. LM-Aero to facilitate an organic software development capability. Subsequent tapes will incorporate DoD approved mandates (Automatic Dependent Surveillance-Broadcast (ADS-B), MIDS, B61-12) and the MMC/PDG architecture.

The Legacy SLEP program is in FSDT to determine the engineering solutions necessary to resolve life-limiting structural issues, and to feed the EMD effort to develop the mod kits and airworthiness certification recommendation.

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The EMD HW/Advanced capability improvements will develop, test, and qualify aircraft weapons systems, including subsystems, replaced/modified due to requirements changes, P3I and DMS/parts obsolescence.

Contract types are Time and Material, Cost Plus Incentive Fee, Cost Plus Fixed Fee and Firm Fixed Price.

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: PB 2016 Air Force **Date:** February 2015

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207133F / F-16 Squadrons	Project (Number/Name) 672671 / F-16 Squadrons
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OFP Updates	Various	Various : Various,	-	65.896	Nov 2013	60.994	Nov 2014	73.323	Nov 2015	-		73.323	Continuing	Continuing	TBD
Service Life Extension Program (SLEP Structures)	Various	Various : Various,	-	16.181	Feb 2014	16.002	Feb 2015	27.977	Jan 2016	-		27.977	Continuing	Continuing	TBD
MMC Upgrade / Display Generator Upgrade	Various	Various : Various,	-	-		19.992	Sep 2015	14.497	Dec 2015	-		14.497	Continuing	Continuing	TBD
JASSM ER	Various	Various : Various,	-	8.000	Mar 2015	8.000	Mar 2015	4.500	Mar 2016	-		4.500	Continuing	Continuing	24.500
EMD HW / Advanced Capabilities	Various	Various : Various,	-	0.470	May 2014	0.500	May 2015	0.200	May 2016	-		0.200	Continuing	Continuing	TBD
SIM Trainers	Various	Various : Various,	-	-		-		2.050	Mar 2016	-		2.050	Continuing	Continuing	-
Subtotal			-	90.547		105.488		122.547		-		122.547	-	-	-

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Tests	Various	Various : Various,	-	13.521	Nov 2013	19.647	Nov 2014	17.600	Nov 2015	-		17.600	Continuing	Continuing	TBD
Subtotal			-	13.521		19.647		17.600		-		17.600	-	-	-

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Mgmt Administrative (PMA) Support	Various	Various : Various,	-	5.819	Jan 2014	7.970	Jan 2015	8.150	Apr 2016	-		8.150	Continuing	Continuing	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force **Date:** February 2015

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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Legacy SLEP Structures Pre-EMD Contract Award	■																											
M6.2+ Minor Tape Field				■																								
Auto GCAS Field				■																								
SLEP MS B								■																				
MMC Upgrade/ Display Generator Upgrade MS B								■																				
SLEP Kit Proof											■																	
M7.1+ OFP Field												■																
M7.2+ OFP Field																											■	

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force **Date:** February 2015

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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Legacy SLEP Structures Pre-EMD Contract Award	1	2014	1	2014
M6.2+ Minor Tape Field	4	2014	4	2014
Auto GCAS Field	4	2014	4	2014
SLEP MS B	4	2015	4	2015
MMC Upgrade/ Display Generator Upgrade MS B	4	2015	4	2015
SLEP Kit Proof	2	2016	2	2016
M7.1+ OFP Field	4	2016	4	2016
M7.2+ OFP Field	1	2019	1	2019