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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 0207134F / F-15E Squadrons
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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	233.898	205.979	356.717	0.000	356.717	216.006	200.672	177.836	231.937	0.000	1,623.045
670131: <i>Initial Operational Test and Evaluation</i>	0.000	71.159	44.969	86.926	0.000	86.926	0.000	0.000	0.000	0.000	0.000	203.054
676020: <i>F-15</i>	0.000	162.739	161.010	269.791	0.000	269.791	216.006	200.672	177.836	231.937	0.000	1,419.991

Note

This program, BA 07 PE 0207134F, project 670131, Mode 5/ADS-B, is a new start.

In FY 2015, PE 0207134F, F-15E Squadrons, Project 670131, Initial Operational Test and Evaluation, F-15 EPAWSS development efforts were transferred to PE 0207171F, F-15 EPAWSS, Project 676038, EPAWSS in order to provide budget transparency.

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15C/D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability). Projected to remain in service past 2040, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical and acquisition support studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via precision timing, data delivery and processing technology, precision registration systems, cockpit Heads Up Display (HUD) and Heads Down Display, instrumentation digitization and modernization, central computer processing power increases, digital mission event recording systems and an infrared (IR) based fire control system. The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability. Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and aircrew training. This includes technical and acquisition-related studies to ensure F-15 lethality and survivability beyond 2040.

The 2017 funding request was reduced by \$4.238 million to account for the availability of prior year execution balances.

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

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 0207134F / <i>F-15E Squadrons</i>
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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	241.969	179.283	255.081	0.000	255.081
Current President's Budget	233.898	205.979	356.717	0.000	356.717
Total Adjustments	-8.071	26.696	101.636	0.000	101.636
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-6.100			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	32.796			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-8.071	0.000			
• Other Adjustments	0.000	0.000	101.636	0.000	101.636

Change Summary Explanation

FY16 was increased by \$20M for AESA Radars for ANG and \$12.796M for requested transfer from APAF for MIDS JTRS. Also reduced \$6.1M for IRST Delays.
 FY17 - increase of \$13.3M to address Mode 5/Automatic Dependent Surveillance Broadcast (ADS-B) and ADCP II

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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 0207134F / F-15E Squadrons					Project (Number/Name) 670131 / Initial Operational Test and Evaluation		
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
670131: <i>Initial Operational Test and Evaluation</i>	0.000	71.159	44.969	86.926	0.000	86.926	0.000	0.000	0.000	0.000	0.000	203.054
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 07 PE 0207134F, project 670131, Mode 5/Automatic Dependent Surveillance Broadcast (ADS-B), is a new start.

In FY 2015, PE 0207134F, F-15E Squadrons, Project 670131, Initial Operational Test and Evaluation, F-15 EPAWSS development efforts were transferred to PE 0207171F, F-15 EPAWSS, Project 676038, EPAWSS in order to provide budget transparency.

A. Mission Description and Budget Item Justification

This includes development of the F-15C and F-15E Advanced Display Core Processor (ADCP) II and Mode 5/ADS-B new start. The ADCP II will develop a common mission computer for the F-15C and F-15E. The current mission computers of both platforms have reached their limits of speed, memory and throughput. Additionally, digital systems have changed the security requirements of both platforms and the older mission computers cannot be upgraded to meet these new requirements. A common mission computer is expected to reduce overall development costs as well as long term maintenance costs. The program will also develop a new F-15C cockpit display to replace an obsolete one. Mode 5 enables the NSA-mandated Mode 5 encryption and anti-jam for Air-Air Interrogator (AAI) and Identification Friend or Foe (IFF) systems. ADS-B provides Air Traffic Control position and other secondary surveillance data and must be installed on all CONUS aircraft by 2020 IAW FAA mandate.

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. Accomplishments/Planned Programs (\$ in Millions)

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Advanced Display Core Processor (ADCP) II	71.159	44.969	78.626	0.000	78.626
Description: Program provides a new central computer for the entire F-15E fleet, replacing the ADCP I. Program also provides a new central computer, Remote Interface Unit and Vertical Situation Display Replacement for the AESA-radar F-15C fleet, replacing the VCC and the existing F-15C Vertical Situation Display. This includes technical and acquisition-related studies.					
FY 2015 Accomplishments:					
Conducted EMD activities. Continued software and hardware development and testing. Began F-15E Electronic Systems Integration Lab (ESIL) Testing. Continued delivery of EMD ADCP II LRUs. Began prequalification					

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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 0207134F / F-15E Squadrons	Project (Number/Name) 670131 / Initial Operational Test and Evaluation

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p>for Flight Worthiness Testing (FWT). Prepared for developmental testing (DT) flight testing on F-15E aircraft. Completed USDR, SRR, PDR & CDR. This includes technical and acquisition-related studies.</p> <p>FY 2016 Plans: Conducted EMD activities. Completed FWT and continue qualification activities and ESIL testing. Began F-15C ESIL Testing. Completed hardware deliveries for ADCP II LRU, VSDR & RIU. Began F-15E Developmental Flight Test. Conducted F-15E System Verification Review #1. This includes technical and acquisition-related studies.</p> <p>FY 2017 Base Plans: Complete F-15E Development Flight Test, begin F-15C Development Flight Test, and begin F-15C and F-15E Force Development Evaluation (FDE). Conduct F-15C System Verification Review #1. Conduct Milestone C and conduct Flight Qualification Testing (FQT). This includes technical and acquisition-related studies.</p> <p>FY 2017 OCO Plans: N/A</p>					
<p>Title: Mode 5/ADS-B</p> <p>Description: Mode 5 enables the NSA-mandated Mode 5 encryption and anti-jam for Air-Air Interrogator (AAI) and Identification Friend or Foe (IFF) systems. The Mode 5 program will remove, upgrade, and then replace the existing APX-114 and APX-119 on all F-15 aircraft in order to add Mode 5 capability. ADS-B provides Air Traffic Control position and other secondary surveillance data and must be installed on all CONUS aircraft by 2020 IAW FAA mandate. The ADS-B program will upgrade the APX-119 on all F-15 aircraft in order to meet the FAA mandate.</p> <p>FY 2015 Accomplishments: N/A</p> <p>FY 2016 Plans: N/A</p> <p>FY 2017 Base Plans: Funding will be used for Mode 5 and ADS-B development. This includes technical and acquisition-related studies.</p> <p>FY 2017 OCO Plans:</p>	0.000	0.000	8.300	0.000	8.300

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207134F / F-15E Squadrons	Project (Number/Name) 670131 / Initial Operational Test and Evaluation

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Accomplishments/Planned Programs Subtotals	71.159	44.969	86.926	0.000	86.926

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: BA07: Line Item # F01500: <i>Aircraft Modification: F-15: PEs</i> 0207130/0207134/0207445/0809731	387.314	644.336	476.060	0.000	476.060	489.257	530.457	0.000	0.000	Continuing	Continuing
• APAF: BA07: Line Item # 000071: <i>Aircraft Replacement Support Equip (BP12)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF: BA07: Line Item # F0150P: <i>F-15 Post Production Support</i>	1.122	3.253	3.039	0.000	3.039	2.583	2.613	0.000	0.000	Continuing	Continuing
• APAF: BA06: Line Item # 000999: <i>Initial Spares/Repair Parts (BP16)</i>	24.785	61.961	58.263	0.000	58.263	37.805	38.512	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy
Program is a continuation of effort which includes the development for all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

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 3600 / 7						R-1 Program Element (Number/Name) PE 0207134F / F-15E Squadrons					Project (Number/Name) 670131 / Initial Operational Test and Evaluation				

Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
F-15 ADCP II Contract	SS/CPIF	Boeing : St Louis, MO	0.000	55.808	Nov 2014	33.532	Nov 2015	75.331	Nov 2016	0.000		75.331	0.000	164.671	-
F-15 ADCP II	C/Various	Various : Various	0.000	13.981	Mar 2015	10.210	Mar 2016	2.076	Mar 2017	0.000		2.076	0.000	26.267	-
F-15 EPAWSS (Pre-MDAP)	TBD	TBD : TBD	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
F-15 C/D/E Mode 5/ADS-B	TBD	TBD : TBD	0.000	0.000		0.000		8.300	Aug 2017	0.000		8.300	0.000	8.300	-
Subtotal			0.000	69.789		43.742		85.707		0.000		85.707	0.000	199.238	-

Remarks

The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, telemetry kits, etc. that are required to meet each program's objectives. The execution vehicles between these DoD entities vary by effort.

FY15PB - Project Number 670131 includes ADCP II only. EPAWSS is now under PE 027171F, Project Number 676038.

FY16PB - Project Number 670131 includes ADCP II only. EPAWSS is moved in FY 16 from PE 027171F, Project Number 676038 to PE 027171F, Project Number 657108.

FY17PB - Project Number 670131 includes ADCP II & Mode 5/ADS-B. EPAWSS is moved in FY 16 from BA07 PE 027171F, Project Number 676038 to BA05 PE 027171F, Project Number 657108.

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force											Date: February 2016				
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Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 Management Support Costs	Various	Various : Various	0.000	1.370	Sep 2015	1.227	Sep 2016	1.219	Sep 2017	0.000		1.219	0.000	3.816	-
Subtotal			0.000	1.370		1.227		1.219		0.000		1.219	0.000	3.816	-

Remarks
 The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, telemetry kits, etc. that are required to meet each program's objectives. The execution vehicles between these DoD entities vary by effort.

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	71.159		44.969		86.926		0.000		86.926	0.000	203.054	-

Remarks

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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 0207134F / <i>F-15E Squadrons</i>	Project (Number/Name) 670131 / <i>Initial Operational Test and Evaluation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ADCP II EMD	1	2015	4	2018
ADCP II F-15E DT	3	2016	3	2017
ADCP II F-15C DT	1	2017	4	2017
ADCP II FDE	4	2017	2	2018
ADCP II MS C	4	2017	4	2017
ADCP II Production Contract Award	2	2018	2	2018
Mode 5/ADS-B DT	3	2017	3	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 0207134F / F-15E Squadrons				Project (Number/Name) 676020 / F-15			
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
676020: F-15	0.000	162.739	161.010	269.791	0.000	269.791	216.006	200.672	177.836	231.937	0.000	1,419.991
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

These development efforts include F-15 Radar Enhancements Electronic Protection (EP) capabilities, Operational Flight Program (OFP) upgrades, Flight Testing, Infrared Search and Track (IRST) and Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS).

The Radar Enhancements (EP) will upgrade the digital Active Electronic Scanned Array (AESA) radar capabilities to counter sophisticated electronic threats. Suite 7C introduces EP into the C/D-model fleet. Initial EP capability for APG-82(V)1 equipped E model aircraft will take place in Suite 8E. Suite 9 will add additional EP capability to both the F-15E and F-15C.

For the F-15 to maintain operational effectiveness, the program must continuously provide the platforms with improved capabilities. To accomplish this there is an on-going need to develop software and hardware upgrades and to flight test new capabilities and systems. The OFP funding line allows the Air Force to release software upgrades approximately every 3 years. At any one time, there will normally be three OFP upgrades in work: one in requirements definition/pricing, one in code writing and test, and one in flight test and release preparation. The Flight Test funding line allows the Air Force to fund the on-going test effort.

Infrared Search and Track (IRST) system will provide air to air detection, tracking and ranging capability for F-15C/D in a radar-denied environment.

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. Accomplishments/Planned Programs (\$ in Millions)

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Operational Flight Program (OFP) Development Efforts	109.602	77.200	102.077	0.000	102.077
Description: Provides OFP program software and hardware updates to integrate new capabilities on all F-15 aircraft. This includes technical and acquisition related studies.					
FY 2015 Accomplishments: Continued Suite 7C (S7C) development and operational flight testing. Continued coding, conducted bench testing and flight testing of Suite 8E (S8E). Continued integration of Litening, Alpha 2 Lite, AIM-9X, and Joint-Air-to-Surface Standoff Missile-Extended Range (JASSM-ER), Universal Armament Interface (UAI) into the S8E OFP. Continued Small Diameter Bomb (SDB)-II and B61-12 Life Extension Program (LEP, aka B61-12) weapon integration into S8E OFP. Accomplished acquisition actions to integrate B61-12 into Suite 8.0.1N. Continued					

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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 0207134F / F-15E Squadrons	Project (Number/Name) 676020 / F-15
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B. Accomplishments/Planned Programs (\$ in Millions)

Suite 9 development. Continued organic software support and Special Projects development efforts. Continued funding support for all F-15 trainers. Continued Problem Reports (PR) and Deficiency Reports (DR) fixes.

FY 2016 Plans:

Delivered S7C to the field. Continued integration of Sniper on the F-15C to meet critical PACOM requirement. Completed S8E development and flight testing. Completed JASSM-ER and Litening integration and flight testing to field with S8E. Awarded contract for B61-12 LEP integration into S8.01N. Continued S9 development and integration of major line items; such as Data Transfer Module (DTM) II, Passive Attack Display (PAD), and EPAWSS. Additionally, MIDS-JTRS will be integrated into F-15 OFPs. Continued organic software support and Special Projects development efforts. Continued funding support for all F-15 trainers. Continued ongoing Problem Report (PR) and Deficiency Report (DR) fixes. Perform technical and acquisition related studies to ensure F-15 lethality and survivability beyond 2040.

FY 2017 Base Plans:

Deliver S8E to the field. Continue B61-12 weapon integration into S8.0.1N OFF. Continue S9 development and integration of major line items: such as DTM II, PAD, EPAWSS, MIDS-JTRS and rehosting B61-12LEP. Additionally, MIDS-JTRS will be integrated into the F-15 OFPs. Continuation of organic software support and Special Projects development efforts. Continue funding support for all F-15 trainers. Continue ongoing Problem Report (PR) and Deficiency Report (DR) fixes. Perform technical and acquisition related studies to ensure F-15 lethality and survivability beyond 2040.

FY 2017 OCO Plans:

N/A

Title: Flight Test

Description: Flight tested improvements initiated in prior years. Baselined infrastructure and personnel support for F-15 Developmental Test (DT) and Initial Operational Test & Evaluation (IOT&E) operations. Purchased long-lead test support assets and unique aircraft test instrumentation. This included technical and acquisition related studies.

FY 2015 Accomplishments:

F-15 Flight Test Support provided contractor support cadre at Eglin and Nellis for DT/IOT&E support, avionics integration, lab operations and maintenance (O&M), Combined Test Facility (CTF) O&M, and long-lead test unique equipment; i.e., program specific aircraft instrumentation, AIM-120 instrumentation kits, data reduction/

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p>Suite 9 development. Continued organic software support and Special Projects development efforts. Continued funding support for all F-15 trainers. Continued Problem Reports (PR) and Deficiency Reports (DR) fixes.</p> <p><i>FY 2016 Plans:</i> Delivered S7C to the field. Continued integration of Sniper on the F-15C to meet critical PACOM requirement. Completed S8E development and flight testing. Completed JASSM-ER and Litening integration and flight testing to field with S8E. Awarded contract for B61-12 LEP integration into S8.01N. Continued S9 development and integration of major line items; such as Data Transfer Module (DTM) II, Passive Attack Display (PAD), and EPAWSS. Additionally, MIDS-JTRS will be integrated into F-15 OFPs. Continued organic software support and Special Projects development efforts. Continued funding support for all F-15 trainers. Continued ongoing Problem Report (PR) and Deficiency Report (DR) fixes. Perform technical and acquisition related studies to ensure F-15 lethality and survivability beyond 2040.</p> <p><i>FY 2017 Base Plans:</i> Deliver S8E to the field. Continue B61-12 weapon integration into S8.0.1N OFF. Continue S9 development and integration of major line items: such as DTM II, PAD, EPAWSS, MIDS-JTRS and rehosting B61-12LEP. Additionally, MIDS-JTRS will be integrated into the F-15 OFPs. Continuation of organic software support and Special Projects development efforts. Continue funding support for all F-15 trainers. Continue ongoing Problem Report (PR) and Deficiency Report (DR) fixes. Perform technical and acquisition related studies to ensure F-15 lethality and survivability beyond 2040.</p> <p><i>FY 2017 OCO Plans:</i> N/A</p> <p><i>Title:</i> Flight Test</p> <p><i>Description:</i> Flight tested improvements initiated in prior years. Baselined infrastructure and personnel support for F-15 Developmental Test (DT) and Initial Operational Test & Evaluation (IOT&E) operations. Purchased long-lead test support assets and unique aircraft test instrumentation. This included technical and acquisition related studies.</p> <p><i>FY 2015 Accomplishments:</i> F-15 Flight Test Support provided contractor support cadre at Eglin and Nellis for DT/IOT&E support, avionics integration, lab operations and maintenance (O&M), Combined Test Facility (CTF) O&M, and long-lead test unique equipment; i.e., program specific aircraft instrumentation, AIM-120 instrumentation kits, data reduction/</p>	19.858	20.246	20.549	0.000	20.549

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

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
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handling equipment. Richter Lab security upgrades nearing completion. Advanced Electronically Scanned Array (AESA) radar synthetic doppler target generator design and prototypes completed.

FY 2016 Plans:
F-15 Flight Test Support provides prime contractor support cadre at Eglin and Nellis for DT/IOT&E support, avionics integration, lab O&M, CTF O&M, and long-lead test unique equipment; i.e., program specific aircraft instrumentation, weapons instrumentation kits, data reduction/handling equipment. Completed Richter Lab security upgrades and lay in provisions for AESA radar equipment. Provided field-ready AESA radar target generators for Eglin and Nellis. Repaired APG-63 and APG-82 radar test aircraft instrumentation. This includes technical and acquisition-related studies.

FY 2017 Base Plans:
F-15 Flight Test Support provides contractor support cadre at Eglin and Nellis for DT/IOT&E support, avionics integration, lab O&M, CTF O&M, and long-lead test unique equipment; i.e., program specific aircraft instrumentation, weapons instrumentation kits, data reduction/handling equipment. Repair radar test aircraft instrumentation. Begin design of replacement radar test aircraft obsolete instrumentation. Complete Richter Labs AESA radar provisions. This includes technical and acquisition-related studies.

FY 2017 OCO Plans:
N/A

Title: F-15 Radar Enhancements	28.008	18.421	64.191	0.000	64.191
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Description: Improvements to F-15 Radar Enhancements (EP). This includes technical and acquisition related studies.

FY 2015 Accomplishments:
Continued implementation of EP into Suite 8 (S8E) & Suite 9 (S9). Continued radar integration in support of S9 EP development. Continued jammer development. Continued Special Projects testing support.

FY 2016 Plans:
Continued implementation of EP into S8E & S9. Continued Special Projects testing support. Began EP and Combat ID candidate risk reduction for future OFP integration. Studied and analyzed F-15 radar performance against future threat baselines. Developed and tested low technology readiness level (TRL) radar candidates for future integration. This includes technical and acquisition-related studies.

FY 2017 Base Plans:

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207134F / F-15E Squadrons	Project (Number/Name) 676020 / F-15			
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p>Continue implementation of EP into S8E & S9. Continue Special Projects testing support. Begin EP and Combat ID candidate risk reduction for future OFP integration. Study and analyze F-15 radar performance against future threat baselines. Develop and test low technology readiness level (TRL) radar candidates for future integration. This includes technical and acquisition-related studies.</p> <p>FY 2017 OCO Plans: N/A</p>					
<p>Title: F-15 Infrared Search and Track (IRST)</p> <p>Description: The Infrared Search and Track (IRST) system will provide the F-15C/Ds with the capability to detect and track objects by infrared radiation. The IRST complements other onboard sensors by scanning a large volume of air space, fills gaps left by other sensors. This capability complements the radar to enhance survivability and lethality against air-to-air threats, provides a passive infrared sensor system that searches for and detects infrared energy, and provides the aircraft mission computer track file data on infrared targets.</p> <p>FY 2015 Accomplishments: Initiated technical and acquisition related studies. Initiated early acquisition planning.</p> <p>FY 2016 Plans: Initiated technical and acquisition related studies. Continued acquisition planning. Executed risk reduction activities required to support the Integration phase.</p> <p>FY 2017 Base Plans: Continue technical and acquisition related studies. Continue acquisition planning including Integration (including OFP updates), Test, and Deployment contracts award. Execute risk reduction activities required to support the Integration phase.</p> <p>FY 2017 OCO Plans: N/A</p>	5.271	12.347	38.838	0.000	38.838
<p>Title: F-15 Multifunctional Information Distribution System - Joint Tactical Radio System (MIDS-JTRS)</p> <p>Description: This upgrade integrates and installs a new Link 16 system on the F-15C & F-15E that complies with an NSA mandate on cryptographic modernization and an FAA mandate on frequency remapping. The FAA mandate requires all fielded Link-16 terminals incorporate the frequency re-mapping capability by 2020.</p> <p>FY 2015 Accomplishments:</p>	0.000	12.796	44.136	0.000	44.136

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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 0207134F / F-15E Squadrons	Project (Number/Name) 676020 / F-15

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
<p>FY 2016 Plans: This upgrade integrated and installed a new Link 16 system on the F-15C& F-15E that complies with an NSA mandate on cryptographic modernization and an FAA mandate on frequency remapping. The FAA mandate requires all fielded Link-16 terminals incorporate the frequency re-mapping capability by 2020. This includes technical and acquisition-related studies.</p> <p>FY 2017 Base Plans: Funding will be used for buying test articles, updating the software on LRUs, and integrating the LRUs with Suite 9 OFP. This includes technical and acquisition-related studies.</p> <p>FY 2017 OCO Plans: N/A</p>					
<p>Title: V3</p> <p>Description: The Non Recurring Effort (NRE) will develop and deliver draft Time Compliance Technical Orders (TCTO) to upgrade F-15 D aircraft to the APG-63 (V)3 configuration. This includes aircraft currently equipped with the APG-63(V)0 and APG-63(V)1 Mechanically Scanned Array (MSA) radar systems. This effort will also allow for the retention of the existing APX-114 AAI and the APX-119 Mode 5 IFF Modification.</p> <p>FY 2015 Accomplishments: N/A</p> <p>FY 2016 Plans: The Non Recurring Effort (NRE) will develop and deliver draft Time Compliance Technical Orders (TCTO) to upgrade F-15 D aircraft to the APG-63 (V)3 configuration. This includes aircraft currently equipped with the APG-63(V)0 and APG-63(V)1 Mechanically Scanned Array (MSA) radar systems. This effort will also allow for the retention of the existing APX-114 AAI and the APX-119 Mode 5 IFF Modification.</p> <p>FY 2017 Base Plans: N/A</p> <p>FY 2017 OCO Plans: N/A</p>	0.000	20.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	162.739	161.010	269.791	0.000	269.791

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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 0207134F / F-15E Squadrons	Project (Number/Name) 676020 / F-15
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # F01500: <i>F-15 Modification of In-Service Aircraft, PEs 0207130, 0207134, 0207445, 0809731</i>	387.314	644.336	476.060	0.000	476.060	489.257	530.457	0.000	0.000	Continuing	Continuing
• APAF: BA06: Line Item # 000999: <i>Initial Spares/Repair Parts (BP16)</i>	24.785	61.961	58.263	0.000	58.263	37.805	38.512	0.000	0.000	Continuing	Continuing
• APAF: BA07: Line Item # F0150P: <i>F-15 Post Production Support</i>	1.122	3.253	3.039	0.000	3.039	2.565	2.613	0.000	0.000	Continuing	Continuing
• APAF: BA07: Line Item # 000071: <i>Aircraft Replacement Support Equip (BP12)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

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 3600 / 7	R-1 Program Element (Number/Name) PE 0207134F / F-15E Squadrons	Project (Number/Name) 676020 / F-15
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 Suite 7/8/9/10 Development and Test	SS/ Various	Boeing : St. Louis, MO	0.000	108.886	Aug 2015	76.083	Aug 2016	100.927	Aug 2017	0.000		100.927	394.436	680.332	-
OFP Suite 7/8/9/10 Development and Test Various	C/Various	Various : Various	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
F-15 Radar Enhancement	SS/ Various	Boeing : St Louis, MO	0.000	27.660	Aug 2015	18.421	Aug 2016	64.191	Aug 2017	0.000		64.191	215.852	326.124	-
F-15 Radar Enhancement Various	C/Various	Various : Various	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
F-15 Infrared Search and Track	SS/ Various	TBD : TBD	0.000	5.271	Aug 2016	12.347	Aug 2016	38.838	Jul 2017	0.000		38.838	141.450	197.906	-
Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS)	SS/ Various	Boeing : St. Louis, MO	0.000	0.000		12.796	Aug 2016	44.136	Jun 2017	0.000		44.136	0.000	56.932	-
V3	SS/ Various	Boeing : St. Louis, MO	0.000	0.000		20.000	Dec 2016	0.000		0.000		0.000	0.000	20.000	-
Subtotal			0.000	141.817		139.647		248.092		0.000		248.092	751.738	1,281.294	-

Remarks
The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, telemetry kits, etc. that are required to meet each program's objectives. The execution vehicles between these DoD entities vary by effort.

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			-	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force **Date:** February 2016

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207134F / F-15E Squadrons	Project (Number/Name) 676020 / F-15
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Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
Boeing (Contractor Test Support)	SS/CPFF	Boeing : St. Louis, MO	0.000	19.858	Sep 2015	20.246	Sep 2016	20.549	Aug 2017	0.000		20.549	74.713	135.366	-
Flight Test Support	Various	Various : TBD	0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	-
Subtotal			0.000	19.858		20.246		20.549		0.000		20.549	74.713	135.366	-

Remarks

The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, telemetry kits, etc. that are required to meet each program's objectives. The execution vehicles between these DoD entities vary by effort.

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 Mgt Support Costs	Various	Various : Various	0.000	1.064	Sep 2015	1.117	Sep 2016	1.150	Sep 2017	0.000		1.150	0.000	3.331	-
Subtotal			0.000	1.064		1.117		1.150		0.000		1.150	0.000	3.331	-

Remarks

The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, telemetry kits, etc. that are required to meet each program's objectives. The execution vehicles between these DoD entities vary by effort.

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		0.000	162.739	161.010	269.791	0.000	269.791	826.451	1,419.991	-

Remarks

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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 0207134F / F-15E Squadrons	Project (Number/Name) 676020 / F-15
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	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
OFP Continuous Development																												
OFP Suite 7C Fielding																												
OFP Suite 8E Fielding																												
OFP Suite 9 MS B																												
OFP Suite 9 EMD Award																												
OFP Suite 9 Fielding																												
Radar Enhancements Suite 8E Fielding																												
Infrared Search and Track Integration and Test																												
Infrared Search and Track Integration and Test MS B																												
Infrared Search and Track Integration and Test EMD Award																												
Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS)																												

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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 0207134F / <i>F-15E Squadrons</i>	Project (Number/Name) 676020 / <i>F-15</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OFP Continuous Development	1	2015	4	2019
OFP Suite 7C Fielding	1	2016	1	2016
OFP Suite 8E Fielding	1	2017	2	2017
OFP Suite 9 MS B	2	2016	3	2016
OFP Suite 9 EMD Award	3	2016	3	2016
OFP Suite 9 Fielding	1	2019	3	2020
Radar Enhancements Suite 8E Fielding	4	2016	4	2016
Infrared Search and Track Integration and Test	2	2015	3	2021
Infrared Search and Track Integration and Test MS B	4	2017	4	2017
Infrared Search and Track Integration and Test EMD Award	3	2017	3	2017
Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS)	4	2016	3	2017

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