Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force											Date: February 2018	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207134F / *F-15E Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	344.184	320.271	192.883	0.000	192.883	241.404	275.615	182.657	187.076	Continuing	Continuing
670131: *Initial Operational Test and Evaluation*	0.000	86.926	51.513	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	138.439
676020: *F-15*	0.000	257.258	268.758	192.883	0.000	192.883	241.404	275.615	182.657	187.076	Continuing	Continuing

Note

This program, BA 7, PE 0207134F, project 676020, Mobile User Objective System (MUOS)/Second Generation Anti-jam Tactical UUF Radio for NATO(SATURN), is a new start.

This program, BA 7, PE 0207134F, project 676020, F-15 C/D/E ADS-B, is a new start.

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 "doubledigit" 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. Funds may be used to resolve emerging safety of flight and diminishing manufacturing sources issues, accommodate technology insertion and fulfill FAA or other mandates necessary to ensure continued aircrew safety and mission effectiveness. This includes technical and acquisition-related studies to ensure F-15 lethality and survivability beyond 2040.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver F-15 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force	Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*

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.

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	356.717	320.271	251.334	0.000	251.334
Current President's Budget	344.184	320.271	192.883	0.000	192.883
Total Adjustments	-12.533	0.000	-58.451	0.000	-58.451
• 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	0.000	0.000			
• SBIR/STTR Transfer	-12.533	0.000			
• Other Adjustments	0.000	0.000	-58.451	0.000	-58.451

Change Summary Explanation

FY17 reduced $12.533M for Small Business Innovative Research (SBIR)

FY19 change of $58.451M consists of rephase of F-15 Radar Enhancement, -$43.7M and rephase of F-15 OFP Suite 9, -$13.3M and remainder for inflation adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
670131: *Initial Operational Test and Evaluation*	0.000	86.926	51.513	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	138.439
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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 encryption and anti-jam updates.

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 future development and long term maintenance costs. The program will also develop a new F-15C cockpit display to replace an obsolete one. Funds may be used to resolve emerging safety of flight and diminishing manufacturing sources issues, accommodate technology insertion and fulfill FAA or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

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.

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Advanced Display Core Processor (ADCP) II	78.626	51.513	0.000	-	0.000
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 (RIU) and Vertical Situation Display Replacement (VSDR)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 2018 Plans: Complete F-15C and F-15E Force Development Evaluation (FDE). Conduct and complete F-15C and F-15E System Verification Review #2. Complete Engineering and Manufacturing Development (EMD) contract. This includes technical and acquisition-related studies. Complete NRE efforts for F-15E and F-15C Re-Spin and NRE on Re-wire NRE on F-15C.					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2019 Base Plans:*** Program ends in FY18 ***FY 2018 to FY 2019 Increase/Decrease Statement:*** See Above					
Title: Mode 5 ***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. ***FY 2018 Plans:*** N/A ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A	8.300	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	86.926	51.513	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APAF 05 Line Item F01500: *F-15 Modification of in Service Aircraft (PEs 0207130F, 0207134F, 0207445F, 0809731F)*	5.624	55.377	76.464	-	76.464	136.516	123.192	174.471	-	52.829	628.528

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
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*

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force		Date: February 2018
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
F-15 ADCP II Contract	SS/CPIF	Boeing : St Louis, MO	-	75.331	Nov 2016	49.013	Nov 2017	-		-		-	0.000	124.344	-
F-15 ADCP II	C/Various	Various : Various	-	2.076	Mar 2017	-		-		-		-	0.000	2.076	-
F-15 C/D/E ADS-B	TBD	TBD : TBD	-	8.300	Aug 2017	-		-		-		-	0.000	8.300	-
		Subtotal	-	85.707		49.013		-		-		-	0.000	134.720	N/A

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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support Costs	Various	Various : Various	-	1.219	Sep 2017	2.500	Sep 2018	-		-		-	0.000	3.719	-
		Subtotal	-	1.219		2.500		-		-		-	0.000	3.719	N/A

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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	86.926		51.513		-		-		-	0.000	138.439	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
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*

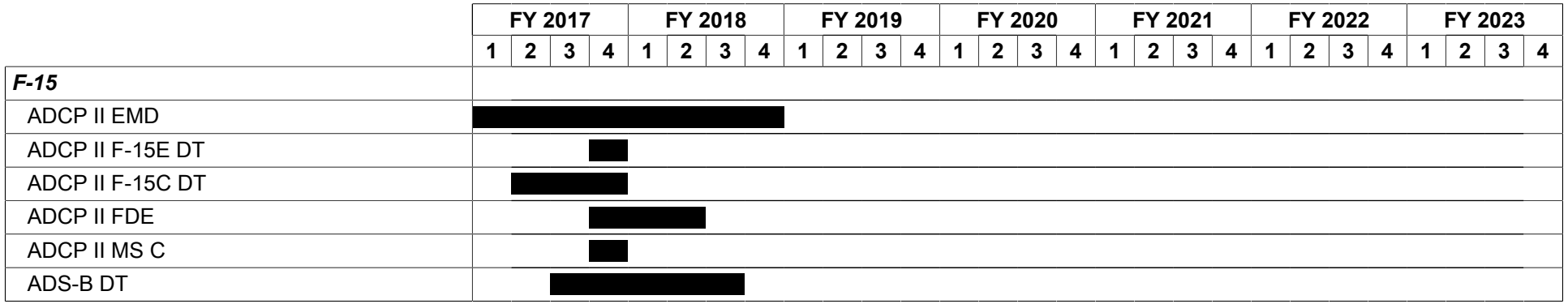

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 670131 / *Initial Operational Test and Evaluation*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
F-15				
ADCP II EMD	1	2017	4	2018
ADCP II F-15E DT	4	2017	4	2017
ADCP II F-15C DT	2	2017	4	2017
ADCP II FDE	4	2017	2	2018
ADCP II MS C	4	2017	4	2017
ADS-B DT	3	2017	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
676020: *F-15*	0.000	257.258	268.758	192.883	0.000	192.883	241.404	275.615	182.657	187.076	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 7, PE 0207134F, project 676020, Mobile User Objective System (MUOS)/Second Generation Anti-jam Tactical UUF Radio for NATO(SATURN), is a new start.

This program, BA 7, PE 0207134F, project 676020, F-15 C/D/E ADS-B, is a new start.

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), Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS)and Mobile User Objective System (MUOS)/Second Generation Anti-jam Tactical UUF Radio for NATO(SATURN). Funds may be used to resolve emerging safety of flight and diminishing manufacturing sources issues, accommodate technology insertion and fulfill FAA or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

The Radar Enhancements (EP) will upgrade the digital Active Electronic Scanned Array (AESA) radar capabilities to counter sophisticated electronic threats. Suite 7C introduced EP into the C/D-model fleet. Initial EP capability for APG-82(V)1 equipped E model aircraft took place in Suite 8E. Suite 9 and beyond 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 2 to 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-contested environment.

Mobile User Objective System (MUOS)/Second Generation Anti-jam Tactical UUF Radio for NATO(SATURN) will provide Satellite Communications (SATCOM) capable Air Force F-15C/D/E aircraft the ability to communicate on the Mobile User Objective System (MUOS) constellation in support of a NORTHCOM Airspace Control Alert (ACA) requirement. SATURN to replace the Have Quick II and comply with the NSA lease key mandated dates.

Automatic Dependent Surveillance-Broadcast (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.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

This program element may include necessary civilian pay expenses required to manage, execute, and deliver F-15 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Operational Flight Program (OFP) Development Efforts	99.772	112.322	97.790	-	97.790
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 2018 Plans:*** Continued Suite 9 development and integration of major line items, such as Data Transfer Module (DTM) II, Passive Attack Display (PAD), Eagle Passive/Active Warning Survivability System (EPAWSS), Multi-functional Information Distribution System (MIDS) - Joint Tactical Radio System (JTRS) MIDS-JTRS, and implementing B61-12LEP (Life Extension Program); all on the new Advanced Display Core Processor (ADCP) II mission computer. Additionally, radar updates continued to be delivered for the APG-63 and APG-82 radars, along with continuation of organic software support and Special Projects development efforts. Continued funding support for all F-15 trainers and ongoing Problem Report (PR) and Deficiency Report (DR) fixes. Perform technical and acquisition related studies to ensure F-15 lethality and survivability beyond 2040. N/A ***FY 2019 Base Plans:*** Continue Suite 9 development and integration of major line items, such as Data Transfer Module (DTM) II, Passive Attack Display (PAD), Eagle Passive/Active Warning Survivability System (EPAWSS), Multi-functional Information Distribution System (MIDS) - Joint Tactical Radio System (JTRS) MIDS-JTRS, and implementing B61-12LEP (Life Extension Program); all on the new Advanced Display Core Processor (ADCP) II mission computer. Continuation of radar updates being delivered for the APG-63 and APG-82 radars, along with continuation of organic software support and Special Projects development efforts. Continuation of funding support for all F-15 trainers and ongoing Problem Report (PR) and Deficiency Report (DR) fixes. Begin work on Suite 10. Perform technical and acquisition related studies to ensure F-15 lethality and survivability beyond 2040. ***FY 2018 to FY 2019 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
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 Operational Test (OT) operations. Purchased long-lead test support assets and unique aircraft test instrumentation. This included technical and acquisition related studies. ***FY 2018 Plans:*** F-15 Flight Test Support provides contractor support cadre at Eglin and Nellis for DT/OT 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. Support 896 TSS with additional manpower, to include prefabrication and surge capability, during increased F-15 modernization activity. Continue Richter Lab modernization and sustainment provisions. This includes technical and acquisition-related studies. ***FY 2019 Base Plans:*** F-15 Flight Test Support continues to provide contractor support cadre at Eglin and Nellis for DT/OT 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. Continues design of replacement radar test aircraft obsolete instrumentation. Continue Richter Lab modernization and sustainment provisions. Continue support to 896 TSS with additional manpower, to include prefabrication and surge capability, during increased F-15 modernization activity. This includes technical and acquisition-related studies. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A	22.470	19.347	17.314	-	17.314
Title: F-15 Radar Enhancements ***Description:*** Improvements to F-15 Radar Enhancements (EP). This includes technical and acquisition related studies. ***FY 2018 Plans:*** Continued implementation of EP into S9 and began implementation into S10. Continued Special Projects testing support. Continued EP and Combat ID candidate risk reduction for future OFP integration. Continued to study and analyze F-15 radar performance against future threat baselines. Continued to develop and test radar	61.853	50.814	17.033	-	17.033

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
technology candidates for future integration in accordance with ACC's F-15 roadmap and threat analysis. This includes technical and acquisition-related studies. ***FY 2019 Base Plans:*** Continue implementation of EP into S9 and into S10. Continue Special Projects testing support. Continue EP and Combat ID candidate risk reduction for future OFP integration. Continue to study and analyze F-15 radar performance and utilization against current and future threat baselines. Continue to develop and test radar technology candidates for future integration in accordance with ACC's F-15 roadmap and threat analysis. This includes technical and acquisition-related studies. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A					
Title: F-15 Infrared Search and Track (IRST) ***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. ***FY 2018 Plans:*** Continued technical and acquisitions studies, integration into OFP and EMD asset build. Began qualification, integration testing and flight test. ***FY 2019 Base Plans:*** Continue technical and acquisitions studies, integration into OFP, EMD asset build and qualification, integration testing and flight test. Begin integration of advanced sensors. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A	41.838	53.103	43.176	-	43.176
Title: Mobile User Objective System (MUOS)/Second Generation Anti-jam Tactical UUF Radio for NATO(SATURN) ***Description:*** Description: To enable F-15C/D/E's with a MUOS/SATURN capability to replace the current UHF Follow-On (UFP) satellite system, Have Quick II and comply with the NSA Lease Key mandate dates. ***FY 2018 Plans:***	0.000	0.000	4.000	-	4.000

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2019 Base Plans:*** FY 2019 Plan: Initiate study to identify gap and COAs; purchase preliminary test units and begin to integrate with GFP. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A					
Title: F-15 Multifunctional Information Distribution System - Joint Tactical Radio System (MIDS JTRS) ***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 2025. ***FY 2018 Plans:*** Finalize ESIL and Boeing flight test program. This includes technical and acquisition-related studies, oversee ESIL & flight test program. Monitoring, testing and incorporation of OFP fixes. ***FY 2019 Base Plans:*** Continue ESIL and Boeing flight test program. This includes technical and acquisition-related studies, oversee ESIL & flight test program. Monitoring, testing and incorporation of OFP fixes. System Verification Reviews on C & E model aircraft ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A	27.474	9.672	6.670	-	6.670
Title: Service Life Extension Program (SLEP) Wing Replacement ***Description:*** The F-15C full scale fatigue test indicated the aircraft wing will not reach the required service life of 2045. This service life extension effort provides improved wings and internal components that may reduce Program Depot Maintenance requirements and supports ongoing development efforts. ***FY 2018 Plans:*** Initiate developmental testing for the F-15C Wing variant and internal components. Conduct airworthiness assessment activities. This includes technical and acquisition-related studies. ***FY 2019 Base Plans:***	-	23.500	5.700	-	5.700

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Continue with developmental testing for the F-15C Wing variant and internal components. Conduct airworthiness assessment activities. This includes technical and acquisition-related studies ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A					
Title: Cabin Pressure Indicator ***Description:*** Cabin Pressure Indicator is an aircraft safety modification to help address situations in which aircrew incapacitation due to hypoxia may occur. The upgrade adds an improved cabin pressurization indication system to increase aircrew situational awareness when a gradual loss of cabin pressure occurs. Cabin Pressure Indicator was approved by Congress as a safety modification in FY16 ***FY 2018 Plans:*** N/A ***FY 2019 Base Plans:*** N/A	3.851	0.000	0.000	-	0.000
Title: F-15 C/D/E ADS-B ***Description:*** 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. ***FY 2018 Plans:*** N/A ***FY 2019 Base Plans:*** ADS-B program upgrades the APX-119 on all F-15 aircraft in order to meet the FAA mandate. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Initiate ADS-B program analysis and development	0.000	0.000	1.200	0.000	1.200
Accomplishments/Planned Programs Subtotals	257.258	268.758	192.883	0.000	192.883

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APAF 05 Line Item F01500: *F-15 Modification of In-Service Aircraft, PEs 0207130, 0207134, 0207445, 0809731*	100.061	429.489	493.989	-	493.989	750.925	847.882	683.950	-	Continuing	Continuing
• APAF 06 Line Item 000999: *Initial Spares/Repair Parts (BP16)*	49.476	37.732	41.411	-	41.411	42.868	48.029	48.893	-	Continuing	Continuing
• APAF 07 Line Item F0150P: *F-15 Post Production Support*	2.980	2.520	2.566	-	2.566	2.610	2.658	2.706	-	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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OFP Suite 8/9/10 Development and Test	SS/ Various	Boeing : St. Louis, MO	-	99.772	Aug 2017	109.822	Aug 2018	94.090	Aug 2019	-		94.090	Continuing	Continuing	-
ADS-B	C/Various	Various : Various	-	-		-		1.200	Jul 2019	-		1.200	Continuing	Continuing	-
F-15 Radar Enhancement	SS/ Various	Boeing : St Louis, MO	0.000	61.853	Aug 2017	50.814	Aug 2018	17.033	Aug 2019	-		17.033	Continuing	Continuing	-
F-15 Infrared Search and Track	SS/ Various	Boeing : St Louis, MO	-	41.838	May 2018	50.765	Aug 2018	42.976	Jul 2019	-		42.976	Continuing	Continuing	-
Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS)	SS/ Various	Boeing : St. Louis, MO	-	27.474	Jun 2017	12.010	Jul 2018	6.670	Feb 2019	-		6.670	Continuing	Continuing	-
Service Life Extension Program (SLEP) Wing Replacement	TBD	Not specified. : NV	-	-		23.500	Aug 2018	5.700	Feb 2019	-		5.700	Continuing	Continuing	-
V3	SS/ Various	Boeing : St. Louis, MO	-	-		-		-		-		-	Continuing	Continuing	-
Cabin Pressure Indicator	TBD	TBD : Various	-	3.851	Sep 2017	-		-		-		-	Continuing	Continuing	-
Mobile User Objective System (MUOS) /Second Generation Anti-jam Tactical UUF Radio for NATO (SATURN)	C/CPAF	Boeing : St. Louis	-	-		-		4.000	Mar 2019	-		4.000	Continuing	Continuing	-
		Subtotal	0.000	234.788		246.911		171.669		-		171.669	Continuing	Continuing	N/A

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.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Boeing (Contractor Test Support)	SS/CPFF	Boeing : St. Louis, MO	-	21.320	Aug 2017	19.347	Aug 2018	17.714	Aug 2019	-		17.714	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	21.320		19.347		17.714		-		17.714	Continuing	Continuing	N/A

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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgt Support Costs	Various	Various : Various	-	1.150	Sep 2017	2.500	Sep 2018	3.500	Sep 2019	-		3.500	Continuing	Continuing	-
		Subtotal	-	1.150		2.500		3.500		-		3.500	Continuing	Continuing	N/A

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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	257.258		268.758		192.883		-		192.883	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

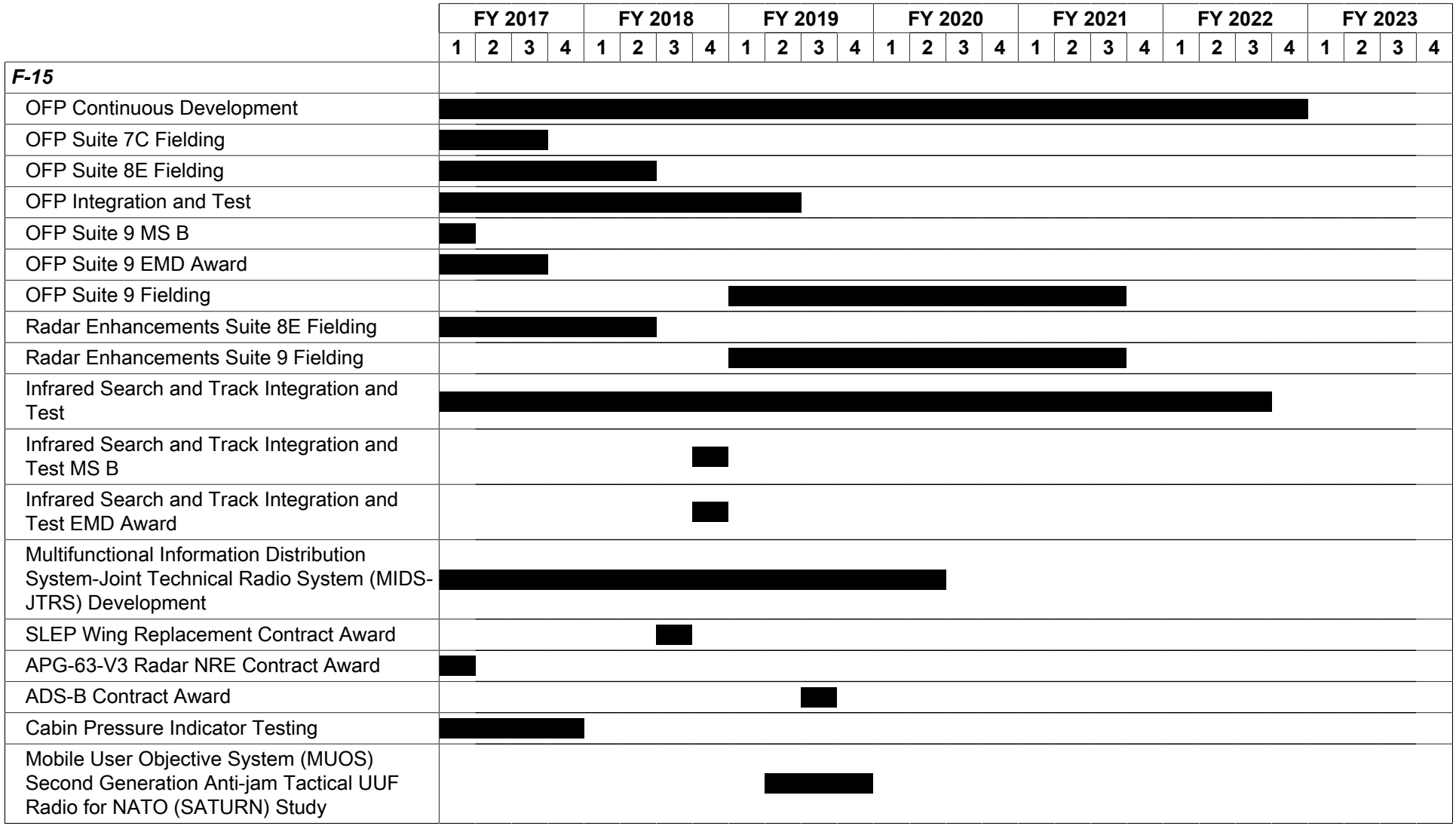

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
F-15				
OFP Continuous Development	1	2017	4	2022
OFP Suite 7C Fielding	1	2017	3	2017
OFP Suite 8E Fielding	1	2017	2	2018
OFP Integration and Test	1	2017	2	2019
OFP Suite 9 MS B	1	2017	1	2017
OFP Suite 9 EMD Award	1	2017	3	2017
OFP Suite 9 Fielding	1	2019	3	2021
Radar Enhancements Suite 8E Fielding	1	2017	2	2018
Radar Enhancements Suite 9 Fielding	1	2019	3	2021
Infrared Search and Track Integration and Test	1	2017	3	2022
Infrared Search and Track Integration and Test MS B	4	2018	4	2018
Infrared Search and Track Integration and Test EMD Award	4	2018	4	2018
Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS) Development	1	2017	2	2020
SLEP Wing Replacement Contract Award	3	2018	3	2018
APG-63-V3 Radar NRE Contract Award	1	2017	1	2017
ADS-B Contract Award	3	2019	3	2019
Cabin Pressure Indicator Testing	1	2017	4	2017
Mobile User Objective System (MUOS) Second Generation Anti-jam Tactical UUF Radio for NATO (SATURN) Study	2	2019	4	2019