| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force | | | | | | | | | | | Date: May 2017 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development* | | | | | R-1 Program Element (Number/Name)<br>PE 0207134F / *F-15E Squadrons* | | | | | | | |
| **COST ($ in Millions)** | **Prior Years** | **FY 2016** | **FY 2017** | **FY 2018 Base** | **FY 2018 OCO** | **FY 2018 Total** | **FY 2019** | **FY 2020** | **FY 2021** | **FY 2022** | **Cost To Complete** | **Total Cost** |
| Total Program Element | 0.000 | 210.029 | 356.717 | 320.271 | 0.000 | 320.271 | 251.334 | 209.020 | 254.894 | 245.179 | Continuing | Continuing |
| 670131: *Initial Operational Test and Evaluation* | 0.000 | 66.344 | 86.926 | 51.513 | 0.000 | 51.513 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 204.785 |
| 676020: *F-15* | 0.000 | 143.685 | 269.791 | 268.758 | 0.000 | 268.758 | 251.334 | 209.020 | 254.892 | 245.179 | Continuing | Continuing |

**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. 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 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.

| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force | | | | | Date: May 2017 |
|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development* | | R-1 Program Element (Number/Name)<br>PE 0207134F / *F-15E Squadrons* | | | |
| **B. Program Change Summary ($ in Millions)** | **FY 2016** | **FY 2017** | **FY 2018 Base** | **FY 2018 OCO** | **FY 2018 Total** |
| Previous President's Budget | 205.979 | 356.717 | 216.006 | 0.000 | 216.006 |
| Current President's Budget | 210.029 | 356.717 | 320.271 | 0.000 | 320.271 |
| Total Adjustments | 4.050 | 0.000 | 104.265 | 0.000 | 104.265 |
| • 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 | 9.999 | 0.000 | | | |
| • SBIR/STTR Transfer | -5.949 | 0.000 | | | |
| • Other Adjustments | 0.000 | 0.000 | 104.265 | 0.000 | 104.265 |

**Change Summary Explanation**

FY16 increase for ADCP II

FY18 increase of $129.987M to cover ADCP II and IRST increase, and Wing Replacement (New Start).

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | | Date: May 2017 |
|---|---|---|---|
| Appropriation/Budget Activity<br>3600 / 7 | R-1 Program Element (Number/Name)<br>PE 0207134F / *F-15E Squadrons* | Project (Number/Name)<br>670131 / *Initial Operational Test and Evaluation* | |

| COST ($ in Millions) | Prior Years | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 670131: *Initial Operational Test and Evaluation* | 0.000 | 66.344 | 86.926 | 51.513 | 0.000 | 51.513 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 204.785 |
| 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. 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 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.

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 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| ***Title:*** Advanced Display Core Processor (ADCP ) II | 66.344 | 78.626 | 51.513 | 0.000 | 51.513 |
| ***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 2016 Accomplishments:***<br>Conducted EMD activities. Completed Flight Worthiness Testing (FWT) and continued qualification activities and Electronic Systems Integration Lab (ESIL) testing. Began F-15C ESIL Testing. Continuation of hardware deliveries for ADCP II LRU, VSDR & RIU. Began F-15E Developmental Flight Test. Completed F-15E System Verification Review #1. Began F-15C Developmental Flight Test aircraft modification. This includes technical and acquisition-related studies. | | | | | |
| ***FY 2017 Plans:***<br>Complete F-15E Development Flight Test, begin F-15C Development Flight Test, and begin F-15C and F-15E Force Development Evaluation (FDE). Conduct and complete F-15C System Verification Review #1. Conduct | | | | | |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>670131 / *Initial Operational Test and Evaluation* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| Milestone C and conduct Functional Qualification Testing (FQT). This includes technical and acquisition-related studies.<br>***FY 2018 Base Plans:***<br>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.<br>***FY 2018 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** Automatic Dependent Surveillance Broadcast (ADS-B)<br>***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.<br>***FY 2016 Accomplishments:***<br>N/A<br>***FY 2017 Plans:***<br>Funding will be used for Automatic Dependent Surveillance Broadcast (ADS-B)development. This includes technical and acquisition-related studies.<br>***FY 2018 Base Plans:***<br>N/A<br>***FY 2018 OCO Plans:***<br>N/A | 0.000 | 8.300 | 0.000 | 0.000 | 0.000 |
| **Accomplishments/Planned Programs Subtotals** | 66.344 | 86.926 | 51.513 | 0.000 | 51.513 |

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

| Line Item | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • APAF: BA05: Line Item # F01500: *F-15 Modification of in* | 4.055 | 5.624 | 55.377 | 0.000 | 55.377 | 76.464 | 136.516 | 123.192 | 174.471 | 52.829 | 628.528 |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>670131 / *Initial Operational Test and Evaluation* |

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

| Line Item | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Service Aircraft (PEs 0207130F, 0207134F, 0207445F, 0809731F)* | | | | | | | | | | | |

**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: FY 2018 Air Force | | | Date: May 2017 |
|---|---|---|---|
| Appropriation/Budget Activity<br>3600 / 7 | R-1 Program Element (Number/Name)<br>PE 0207134F / *F-15E Squadrons* | Project (Number/Name)<br>670131 / *Initial Operational Test and Evaluation* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F-15 ADCP II Contract | SS/CPIF | Boeing : St Louis, MO | 0.000 | 54.907 | Nov 2015 | 75.331 | Nov 2016 | 49.013 | Nov 2017 | 0.000 | | 49.013 | 0.000 | 179.251 | - |
| F-15 ADCP II | C/Various | Various : Various | 0.000 | 10.210 | Mar 2016 | 2.076 | Mar 2017 | 0.000 | | 0.000 | | 0.000 | 0.000 | 12.286 | - |
| F-15 C/D/E ADS-B | TBD | TBD : TBD | 0.000 | 0.000 | | 8.300 | Aug 2017 | 0.000 | | 0.000 | | 0.000 | 0.000 | 8.300 | - |
| | | **Subtotal** | 0.000 | 65.117 | | 85.707 | | 49.013 | | 0.000 | | 49.013 | 0.000 | 199.837 | - |

**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)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Subtotal** | - | - | | - | | - | | - | | - | - | - | - |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Subtotal** | - | - | | - | | - | | - | | - | - | - | - |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Program Management Support Costs | Various | Various : Various | 0.000 | 1.227 | Sep 2016 | 1.219 | Sep 2017 | 2.500 | Sep 2018 | 0.000 | | 2.500 | 0.000 | 4.946 | - |
| | | **Subtotal** | 0.000 | 1.227 | | 1.219 | | 2.500 | | 0.000 | | 2.500 | 0.000 | 4.946 | - |

| Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>670131 / *Initial Operational Test and Evaluation* |

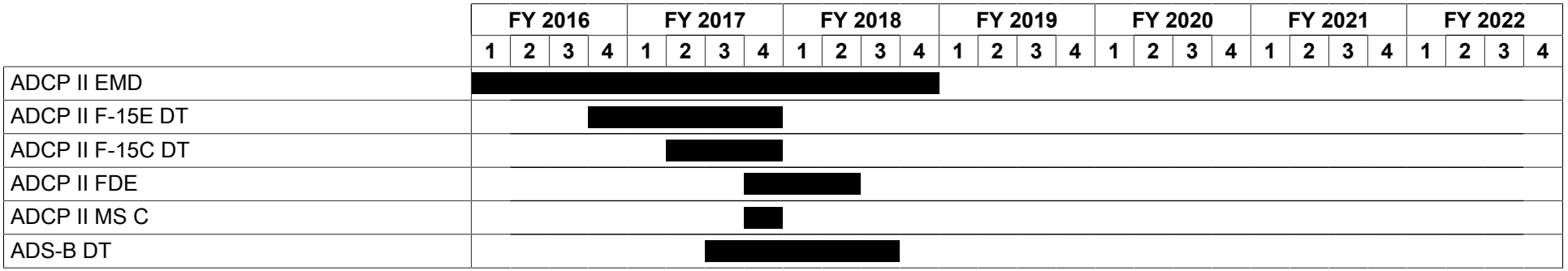
**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Remarks**<br>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 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 0.000 | 66.344 | | 86.926 | | 51.513 | | 0.000 | | 51.513 | 0.000 | 204.783 | - |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>670131 / *Initial Operational Test and Evaluation* |



| Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>670131 / *Initial Operational Test and Evaluation* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| ADCP II EMD | 1 | 2016 | 4 | 2018 |
| ADCP II F-15E DT | 4 | 2016 | 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: FY 2018 Air Force | | | Date: May 2017 |
|---|---|---|---|
| Appropriation/Budget Activity<br>3600 / 7 | R-1 Program Element (Number/Name)<br>PE 0207134F / *F-15E Squadrons* | Project (Number/Name)<br>676020 / *F-15* | |

| COST ($ in Millions) | Prior Years | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 676020: *F-15* | 0.000 | 143.685 | 269.791 | 268.758 | 0.000 | 268.758 | 251.334 | 209.020 | 254.892 | 245.179 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Note**

Cabin Pressure Indicator was approved by Congress as a safety modification and $250K was moved from IRST in FY16 to fund the Cabin Pressure Indicator replacement effort.

**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). 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 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 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| ***Title:*** Operational Flight Program (OFP) Development Efforts | 66.320 | 114.077 | 112.322 | 0.000 | 112.322 |
| ***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 2016 Accomplishments:*** | | | | | |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| 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.<br>***FY 2017 Plans:***<br>Deliver S8E to the field. Continue B61-12 weapon integration into S8.0.1N OFP. 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.<br>***FY 2018 Base Plans:***<br>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. Additionally, radar updates will be 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.<br>***FY 2018 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** Flight Test | 14.636 | 21.549 | 19.347 | 0.000 | 19.347 |
| ***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 | | | | | |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| long-lead test support assets and unique aircraft test instrumentation. This included technical and acquisition related studies.<br><br>***FY 2016 Accomplishments:***<br>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.<br>***FY 2017 Plans:***<br>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.<br>***FY 2018 Base Plans:***<br>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.<br>***FY 2018 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** F-15 Radar Enhancements<br>***Description:*** Improvements to F-15 Radar Enhancements (EP). This includes technical and acquisition related studies.<br><br>***FY 2016 Accomplishments:*** | 18.421 | 64.191 | 50.814 | 0.000 | 50.814 |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| Continued implementation of EP into S8E & S9. Continued Special Projects testing support. Began EP and Combat ID candidate risk reduction for future OFP integration. Developed jammers to be used in F-15 System Integration Labs.<br>***FY 2017 Plans:***<br>Continue implementation of EP into S8E & S9. Continue Special Projects testing support. Continue 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 in accordance with ACC's F-15 roadmap and threat analysis. This includes technical and acquisition-related studies.<br>***FY 2018 Base Plans:***<br>Continue implementation of EP into S9 and begin implementation into S10. Continue Special Projects testing support. Continue 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 in accordance with ACC's F-15 roadmap and threat analysis. This includes technical and acquisition-related studies.<br>***FY 2018 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** F-15 Infrared Search and Track (IRST) | 11.774 | 41.838 | 50.765 | 0.000 | 50.765 |
| ***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.<br>***FY 2016 Accomplishments:***<br>Initiated technical and acquisition related studies. Continued acquisition planning. Executed risk reduction activities required to support the Integration phase.<br>***FY 2017 Plans:***<br>Continue technical and acquisitions studies. Execute risk reduction activities. Begin integration into OFP, EMD asset build, and test planning.<br>***FY 2018 Base Plans:*** | | | | | |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| Continue technical and acquisitions studies, integration into OFP and EMD asset build. Begin qualification and integration testing.<br>***FY 2018 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** F-15 Multifunctional Information Distribution System - Joint Tactical Radio System (MIDS-JTRS)<br>***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.<br>***FY 2016 Accomplishments:***<br>Finalized investigation request for MIDS-JTRS platform interface through MIDS Program Office. Started development on F-15 platform-specific integrated build for MIDS-JTRS terminal. Continued development planning with prime integrator.<br>***FY 2017 Plans:***<br>Finalize integrated build for MIDS-JTRS and deliver to prime integrator for platform integration in ESIL. Begin aircraft OFP integration and deliver test assets to flight test locations. This includes technical and acquisition-related studies.<br>***FY 2018 Base Plans:***<br>Finalize ESIL and being flight test program. This includes technical and acquisition-related studies.<br>***FY 2018 OCO Plans:***<br>N/A | 12.284 | 25.136 | 12.010 | 0.000 | 12.010 |
| ***Title:*** Service Life Extension Program (SLEP) Wing Replacement<br>***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.<br>***FY 2018 Base Plans:***<br>Initiate developmental testing for the F-15C Wing variant and internal components. Conduct airworthiness assessment activities. This includes technical and acquisition-related studies. | - | - | 23.500 | - | 23.500 |
| ***Title:*** F-15D APG-63(v)3 Radar Upgrade | 20.000 | 0.000 | 0.000 | 0.000 | 0.000 |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
|---|---|---|---|---|---|
| ***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.<br>***FY 2016 Accomplishments:***<br>Developed technical documentation and designed kits. Ensured Mode 5 capability is retained. Conducting a technical evaluation and expecting contract award 1QFY17.<br>***FY 2017 Plans:***<br>N/A<br>***FY 2018 Base Plans:***<br>N/A<br>***FY 2018 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** Cabin Pressure Indicator<br>***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<br>***FY 2016 Accomplishments:***<br>Selected, tested and integrated the Cabin Pressure Indicator onto the F-15 aircraft.<br>***FY 2017 Plans:***<br>Selected, tested and integrated the Cabin Pressure Indicator onto the F-15 aircraft.<br>***FY 2018 Base Plans:***<br>N/A<br>***FY 2018 OCO Plans:***<br>N/A | 0.250 | 3.000 | 0.000 | 0.000 | 0.000 |
| **Accomplishments/Planned Programs Subtotals** | 143.685 | 269.791 | 268.758 | 0.000 | 268.758 |

| Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force | | | Date: May 2017 |
|---|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* | |

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

| Line Item | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • APAF: BA05: Line Item # F01500: *F-15 Modification of In-Service Aircraft, PEs 0207130, 0207134, 0207445, 0809731* | 594.877 | 100.061 | 429.489 | 0.000 | 429.489 | 493.989 | 750.925 | 847.882 | 683.950 | Continuing | Continuing |
| • APAF: BA06: Line Item # 000999: *Initial Spares/Repair Parts (BP16)* | 55.721 | 49.476 | 37.732 | 0.000 | 37.732 | 41.411 | 42.868 | 48.029 | 48.893 | Continuing | Continuing |
| • APAF: BA07: Line Item # F0150P: *F-15 Post Production Support* | 3.225 | 2.980 | 2.520 | 0.000 | 2.520 | 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: FY 2018 Air Force | | | Date: May 2017 |
|---|---|---|---|
| Appropriation/Budget Activity<br>3600 / 7 | R-1 Program Element (Number/Name)<br>PE 0207134F / *F-15E Squadrons* | Project (Number/Name)<br>676020 / *F-15* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFP Suite 7/8/9/10 Development and Test | SS/ Various | Boeing : St. Louis, MO | 0.000 | 65.203 | Aug 2016 | 112.927 | Aug 2017 | 109.822 | Aug 2018 | 0.000 | | 109.822 | Continuing | Continuing | - |
| ADS-B | C/Various | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | - |
| F-15 Radar Enhancement | SS/ Various | Boeing : St Louis, MO | 0.000 | 18.421 | Aug 2016 | 64.191 | Aug 2017 | 50.814 | Aug 2018 | 0.000 | | 50.814 | Continuing | Continuing | - |
| F-15 Infrared Search and Track | SS/ Various | TBD : TBD | 0.000 | 11.774 | Aug 2016 | 41.838 | Jul 2017 | 50.765 | Aug 2018 | 0.000 | | 50.765 | Continuing | Continuing | - |
| Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS) | SS/ Various | Boeing : St. Louis, MO | 0.000 | 12.284 | Aug 2016 | 25.136 | Jun 2017 | 12.010 | Jul 2018 | 0.000 | | 12.010 | Continuing | Continuing | - |
| Service Life Extension Program (SLEP) Wing Replacement | TBD | Not specified. : TBD | 0.000 | 0.000 | | 0.000 | | 23.500 | Aug 2018 | 0.000 | | 23.500 | 0.000 | 23.500 | - |
| V3 | SS/ Various | Boeing : St. Louis, MO | 0.000 | 20.000 | Dec 2016 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | - |
| Cabin Pressure Indicator | TBD | TBD : Various | 0.000 | 0.250 | Sep 2016 | 3.000 | Sep 2017 | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | - |
| | | **Subtotal** | 0.000 | 127.932 | | 247.092 | | 246.911 | | 0.000 | | 246.911 | - | - | - |

**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)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Subtotal** | - | - | | - | | - | | - | | - | - | - | - |

| Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force | | | Date: May 2017 |
|---|---|---|---|
| Appropriation/Budget Activity<br>3600 / 7 | R-1 Program Element (Number/Name)<br>PE 0207134F / *F-15E Squadrons* | Project (Number/Name)<br>676020 / *F-15* | |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boeing (Contractor Test Support) | SS/CPFF | Boeing : St. Louis, MO | 0.000 | 14.636 | Sep 2016 | 21.549 | Aug 2017 | 19.347 | Aug 2018 | 0.000 | | 19.347 | Continuing | Continuing | - |
| | | **Subtotal** | 0.000 | 14.636 | | 21.549 | | 19.347 | | 0.000 | | 19.347 | - | - | - |

**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 2016 Cost | FY 2016 Award Date | FY 2017 Cost | FY 2017 Award Date | FY 2018 Base Cost | FY 2018 Base Award Date | FY 2018 OCO Cost | FY 2018 OCO Award Date | FY 2018 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Program Mgt Support Costs | Various | Various : Various | 0.000 | 1.117 | Sep 2016 | 1.150 | Sep 2017 | 2.500 | Sep 2018 | 0.000 | | 2.500 | Continuing | Continuing | - |
| | | **Subtotal** | 0.000 | 1.117 | | 1.150 | | 2.500 | | 0.000 | | 2.500 | - | - | - |

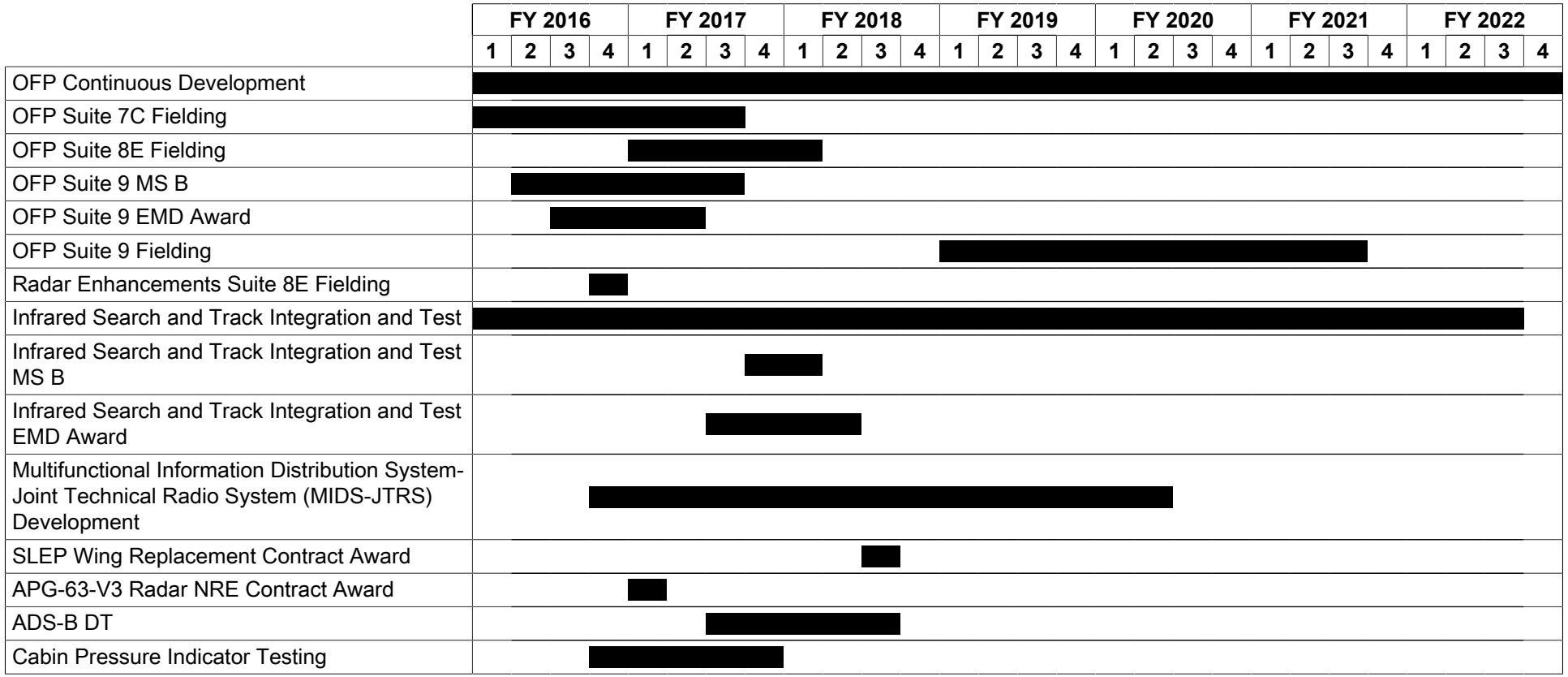
**Remarks**

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 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 0.000 | 143.685 | | 269.791 | | 268.758 | | 0.000 | | 268.758 | - | - | - |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* |



| Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force | | Date: May 2017 |
|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0207134F / *F-15E Squadrons* | **Project (Number/Name)**<br>676020 / *F-15* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| OFP Continuous Development | 1 | 2016 | 4 | 2022 |
| OFP Suite 7C Fielding | 1 | 2016 | 3 | 2017 |
| OFP Suite 8E Fielding | 1 | 2017 | 1 | 2018 |
| OFP Suite 9 MS B | 2 | 2016 | 3 | 2017 |
| OFP Suite 9 EMD Award | 3 | 2016 | 2 | 2017 |
| OFP Suite 9 Fielding | 1 | 2019 | 3 | 2021 |
| Radar Enhancements Suite 8E Fielding | 4 | 2016 | 4 | 2016 |
| Infrared Search and Track Integration and Test | 1 | 2016 | 3 | 2022 |
| Infrared Search and Track Integration and Test MS B | 4 | 2017 | 1 | 2018 |
| Infrared Search and Track Integration and Test EMD Award | 3 | 2017 | 2 | 2018 |
| Multifunctional Information Distribution System-Joint Technical Radio System (MIDS-JTRS) Development | 4 | 2016 | 2 | 2020 |
| SLEP Wing Replacement Contract Award | 3 | 2018 | 3 | 2018 |
| APG-63-V3 Radar NRE Contract Award | 1 | 2017 | 1 | 2017 |
| ADS-B DT | 3 | 2017 | 3 | 2018 |
| Cabin Pressure Indicator Testing | 4 | 2016 | 4 | 2017 |