Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force											Date: April 2022	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207133F / *F-16 Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	197.641	225.573	244.696	0.000	244.696	183.185	183.635	133.425	136.391	Continuing	Continuing
672671: *F-16 Squadrons*	-	197.641	225.573	244.696	0.000	244.696	183.185	183.635	133.425	136.391	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 7, PE 0207133F, project 672671, Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-JTRS), is a new start.

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier fixed-wing, high performance, single engine, multi-mission fighter aircraft comprising 45% of the AF fighter inventory. Operational since 1980, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions, such as, offensive and defensive counter-air, close air support, forward air control, air interdiction (day/night and all-weather) and Suppression of Enemy Air Defenses (SEAD)/destruction of enemy air defenses (DEAD). The F 16 remains the USAF's primary SEAD/DEAD platform. The aircraft has evolved its capabilities by capitalizing upon advancements made in computers, avionics systems, engines, and structures technologies to meet emerging warfighter requirements and combat current and evolving enemy threats. These computer processing and avionics upgrades are critical to building a modernized architecture that promotes current open, agile, and digital concepts to enable future technological growth of the F-16's capabilities well into the 2040s. Furthermore, the F-16 provides the capacity called for in the National Defense Strategy (NDS) by supplying the USAF the highest readiness rates at the lowest operating costs of any US fighter. The F-16 programs listed below support the NDS's call to strengthen alliances by being the DoD's largest Foreign Military Sales (FMS) program servicing over 26 countries and growing. The specific efforts and associated funding details described in this document directly maps to the NDS as it provides upgrades to the F-16 platform enabling the delivery of joint lethality in contested environments throughout the coming decades.

RDT&E efforts include Operational Flight Program (OFP) software (SW) development required to integrate new precision weapons, advanced targeting pods, improved avionics, and other hardware (HW) mods to meet the Home Land Defense (HLD) Mission, DoD mandates, and maintain updates on the respective F-16 training simulators, and other hardware subsystems; Engineering Manufacturing and Design (EMD) Hardware/Advanced capability improvements require funding to develop, test, and qualify, weapon systems, aircraft subsystems replaced or modified due to requirements changes, pre-planned product improvements (P3I), Diminishing Manufacturing Sources (DMS), and parts obsolescence; Modular Mission Computer (MMC) Upgrade/Programmable Display Generator Upgrade resolves shortfalls in mission computer memory and throughput brought on by the addition of incremental combat capability additions, addresses cyber-security, includes Non-Recurring Engineering (NRE), design, development, integration, and ground/ flight test for fielding; F-16 Training Simulator updates enable the USAF to exercise/train using the most current F-16 OFP available to all block configurations, to include both aircrew and maintenance trainers; Comm Suite Radio Upgrade (CSU) and improved satellite communication (SATCOM) radio upgrade with Mobile User Objective System (MUOS) capability meets next-gen tactical narrow band SATCOM with better crypto capabilities; an Active Electronically Scanned Array (AESA) Radar capable on all blocks that offers enhanced lethality, advanced electronic protection capabilities, as well as, improved reliability and maintainability on F-16 aircraft; Multi-functional Information Distribution System-Joint Tactical Radio System (MIDS-JTRS) provides a real-time, jam resistant, and secure information system for the transfer of combat data, voice, and navigation information between widely dispersed battle elements; Hybrid Flight Control Computer (HFLCC) Auto Ground Collision Avoidance System (AGCAS) development and integration prevents most controlled flight into terrain

(CFIT) accidents using terrain database and prediction algorithms for aircraft trajectory recovery and executes an automated fly-up maneuver to avoid collision; Advanced Identification Friend or Foe (AIFF-Mode5) on F-16 aircraft provides improved positive identification for Air Traffic Control reporting, combat targeting, and fratricide prevention; Digital Radar Warning Receiver (DRWR) improves existing radar warning receiver performance and Electronic Warfare (EW) threat detection range, azimuth, detection time, and allows for radio frequency compatibility (RFC/SIU) issues with other on board transmitters. DRWR sub-program Integrated Viper Electronic Warfare Suite (IVEWS) previously justified under DRWR as Next Gen EW (NGEW) Suite is a section 804 Middle Tier rapid prototyping program that provides improved DRWR performance and Active Jamming capability in an internal suite to keep the F-16 operationally viable beyond 2046. IVEWS has been separated to an additional Cost Category to continue development and now has a separate mod line, IVEWS P-3A Mod 633035. IVEWS has been separated to an additional Cost Category to continue development and now has a separate mod line, IVEWS P-3A Mod 633035. M-Code improves existing Embedded GPS/INS (EGI), providing an upgradeable, resilient, and reliable Position, Navigation, and Timing (PNT) system.

The total cost of the F-16 EW Suite (F-16IVEWS) Middle Tier of Acquisition effort is $656.46 million, including RDT&E and procurement of prototype units. F-16 EW Suite (F-16IVEWS) is not fully funded across the Future Years Defense Program. The Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trades based on technical maturity, or transition to alternative pathways.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY21 4.023M was expended for civilian pay expenses in this program element, and in FY22 5.919M is forecasted for civilian pay expenses in this program element.

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. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	202.498	224.573	0.000	0.000	0.000
Current President's Budget	197.641	225.573	244.696	0.000	244.696
Total Adjustments	-4.857	1.000	244.696	0.000	244.696
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	1.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-4.448	0.000			
• Other Adjustments	-0.409	0.000	244.696	0.000	244.696

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Change Summary Explanation

The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

FY21 SBIR/STTR Transfer: -4.448M reduction for SBIR
FY21 Other Adjustments: -0.409M for Apr 21 UPAD
FY22 Congressional Add: +1.000M(+5.000M lithium battery replacement; -4.000M DRWR)

C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: OFP Updates on all F-16 aircraft	81.329	74.666	89.889
Description: OFP versions are updated continually to integrate new weapons, targeting pods, and improved avionics. Increment 1 OFP is comprised of four separate OFPs (2 x pre-block called "SCU" and 2 x post-block called "M-Series"). FY23 development would focus on M-series only to enable the design and coding of software via an agile incremental cadence of 1-2 years on post-block F-16s. Main thrusts will integrate new precision weapons, advanced targeting pods, and improved avionics to meet DoD mandates in order to modernize the F-16's architecture. OFP increments are the key development and fielding mechanism enabling the F-16's ability to meet NDS requirements to operate in contested environments and defend the homeland. Systems Integration Labs (SILs) are required to integrate software into the various hardware, validate user requirements, and review system safety and security prior to release to flight test. These labs require annual upgrades to increase development and test efficiencies which also includes Development-Security-Operations (DevSecOps) technologies. F-16 OFPs are developed 100% organically by the 309th Software Engineering Group (SWEG) at Hill AFB, UT. The OFP effort also contains Program Management Administration (PMA) support activities to include travel, office supplies, training courses, Video Teleconferencing (VTC), and support contractors. ***FY 2022 Plans:*** Develop and Field Increment 1 capability while maintaining and upgrading portions of the SIL. Plan and develop requirements for Increment 1. ***FY 2023 Plans:*** Develop and Field Increment 1 capability while maintaining and upgrading portions of the SIL. Plan and develop requirements for Increment 2 (planned FY24 phase-in). Increment 2 OFP is the next OFP phase following Inc2 and runs FY24 through FY27. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to phasing of program requirements.			
Title: Flight Test	13.335	12.410	18.118

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: The F-16's test fleet of 44 aircraft encompasses Developmental Test and Evaluation (DT&E) at Edwards AFB, combined Development Test/Operational Test (DT/OT) at Eglin AFB and OT at Nellis AFB, and the Air National Guard Air Force Reserve Command Test Center (AATC) including Force Development Evaluation (FDE). ***FY 2022 Plans:*** Increase support of DT&E infrastructure to account for growing test requirements from new modification programs. Modification of additional DT/OT test aircraft with new hardware to support Increment 1 OFPs for FY2023 DT/OT testing. Initiate combined DT/OT flight test supporting the upgraded MMC and programmable display generator hardware programs along with new communication suite improvements, and support out-of-cycle regression testing. ***FY 2023 Plans:*** Increase support of DT&E infrastructure to account for growing test requirements from new modification programs. Modification of additional DT/OT test aircraft with new hardware to support Increment 1 OFPs for FY2023 DT/OT testing. Initiate combined DT/OT flight test supporting the upgraded MMC and programmable display generator hardware programs along with new communication suite improvements, and support out-of-cycle regression testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to cost estimate/phasing of program requirements.			
Title: EMD HW/Advanced Capabilities Improvements ***Description:*** Advanced Capability Improvements include, but are not limited to, sensor upgrades, radar updates and other self- protection/electronic protection (EP) enhancements, 4th/5th gen fighter network communications, Radio Frequency (RF) compatibility, requirements and studies analysis, lab, and/or on-aircraft evaluation of potential subsystem changes / capability improvements. ***FY 2022 Plans:*** Development of Lithium Battery replacement for F-16 Hydrazine EPU ***FY 2023 Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to congressional add only funding this requirement for 1 year.	0.000	5.000	0.000
Title: Modular Mission Computer (MMC) / Programmable Display Generator (PDG) Upgrade on F-16 aircraft	12.402	4.145	1.274

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: The MMC upgrade on the F-16 post-block aircraft, (Blk 40, 42, 50, 52) resolves shortfalls in mission computer memory and throughput. Funding includes development, design, integration, and ground/flight test for fielding of improved MMC capabilities with the Increment 1 OFP. The PDG upgrade allows a fully integrated multifunction display solution including Hands On Throttle and Stick (HOTAS) integration with Sensor of Interest (SOI), format swapping, and high definition video on 4x4 displays; provides improved display formats during dynamic maneuvers; resolves symbol freezing issues due to throughput constraints; and provides a sustainable approach to address growing DMS concerns with the current PDG. Both programs require the addition of an Ethernet based High Speed Data Network (HSDN) that facilitates future increments of combat capability with higher data bandwidth rates for system compatibility and interoperability. This program is a critical element to a modernized F-16 technology digital backbone and necessary to modernize the F-16 beyond its current computing capability. Additionally this effort enables the F-16 to effectively communicate with advanced platforms to improve battlefield situational awareness and to precisely employ and conduct air and ground operations while maintaining the highest level of survivability. Without it, all current and future F-16 modernization efforts cannot be supported. Both the MMC and PDG directly map to the NDS as critical enabling technologies required for the F-16 to operate in contested environments and defend the homeland. ***FY 2022 Plans:*** Continue development activities of the MMC Upgrade, PDG Upgrade, and associated HSDN through design, development, integration, and delivery of test assets for SIL and flight test in support of fielding with Increment 1 OFPs. ***FY 2023 Plans:*** Continue development activities of the MMC Upgrade, PDG Upgrade, and associated HSDN through design, development, integration, and delivery of test assets for SIL and flight test in support of fielding with Increment 1 OFPs. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to phasing of program requirements.			
Title: Simulator Trainers Program (STP)	9.569	7.851	15.768
Description: F-16 Simulator Training Programs (Simulators) supports the development, acquisition, fielding, and integration of F-16 Simulators. It enables the USAF to exercise and train using the latest F-16 capabilities available to multiple aircraft configurations, while reducing the overall cost of maintenance and aircrew training. In order to maintain concurrency with the aircraft OFP, this funding supports development, test, and integration of simulator upgrades. Funds may be used to address emerging and short notice Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues. DMS efforts to include removal of end-of-life software/hardware within simulators systems and move to a modular, common, open-system architecture that is sustainable and cyber-resilient. This program element implements requirements and standards defined under the Simulator			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Common Architecture Requirements and Standards (SCARS) initiative and may include necessary civilian pay expenses required to manage, execute, and deliver F-16 weapon system simulator capabilities. ***FY 2022 Plans:*** Continue contract efforts for managing and maintaining F-16 simulator trainers to include tech order development. This funding also supports development, test, and integration of simulator upgrades to include new aircraft OFPs. Supporting development efforts for the F-16 STP trainers. ***FY 2023 Plans:*** Continue contract efforts for managing and maintaining F-16 simulator trainers to include tech order development. This funding also supports development, test, and integration of simulator upgrades to include new aircraft OFPs. Supporting development efforts for the F-16 STP trainers. Significant hardware purchases are planned in FY23 to ensure compatibility with latest F-16 configuration. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to phasing of OFP program requirements. Significant hardware purchases are planned in FY23 to ensure compatibility with latest F-16 configuration.			
Title: AIFF Mode 5	11.176	0.000	16.354
Description: AIFF/Mode 5 provides hardware and software/firmware update required to comply with DoD mandate for Advanced Identify Friend or Foe (IFF) Mode 5. Transponder upgrade program replaces/upgrades existing hardware with an AIFF Mode 5 capable system. Advanced Identify Friend or Foe system (AIFF) provides positive identification for Air Traffic Control reporting, combat targeting, and fratricide prevention. This program maps to the NDS by providing more secure command and control, which enables increased interoperable communications across the joint force. This critical communications capability generates a more lethal force to defeat enemies and achieve sustainable outcomes in order to protect the American people and vital US interests. This funding request will support potential DMS and obsolescence solutions, to include, if optimal, life of type buys, or bridge buys limited to the program of record quantity. This funding request also supports flight testing and technical data updates, as required. Additionally, this funding will utilize existing hardware/software/firmware from the developed APX-125/APX-126 and re-host or integrate into the APX-12X. ***FY 2022 Plans:*** N/A ***FY 2023 Plans:***			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Continue development funded in FY21, and occurring throughout FY22, during Critical Design Review III. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to phasing of program requirements based on updated costs.			
Title: AESA Radar ***Description:*** This is a continuation of the Active Electronically Scanned Array (AESA) Radar congressional add funding line in FY16 and FY17. The AESA Program provides an upgrade from the current APG-68 system to an APG-83 AESA radar that offers advanced targeting and electronic protection capabilities as well as improved reliability and maintainability to support the Aerospace Control Alert (ACA) mission for Homeland Defense (HLD). Ongoing radar Operational Flight Program (OFP) development includes the full Phase III capability development document (CDD) implementation. This program directly maps to the NDS as it provides the most critical upgrade to the F-16's ability to successfully defend the homeland against attack. ***FY 2022 Plans:*** Continue Phase III development and test efforts for full CDD radar capabilities. Support initial fielding of Phase III radars. ***FY 2023 Plans:*** Continue Phase III development and test efforts for full CDD radar capabilities. Support initial fielding of Phase III radars. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to phasing of program requirements.	26.617	30.063	29.598
Title: Comm Suite Radio Upgrade Aircraft ***Description:*** Provides mandatory CJCS updates to the ARC-210 satellite communication (SATCOM) radios on F-16 aircraft including Second Generation Anti-Jam Tactical radio for NATO (SATURN) with Mobile User Objective System (MUOS) and improved crypto capability with the addition of a Cockpit Communication Control Panel (C3PO), and Digital Comm Matrix (DCM). ***FY 2022 Plans:*** N/A ***FY 2023 Plans:*** N/A	1.835	0.000	0.000
Title: Digital Radar Warning Receiver ***Description:*** Digital Radar Warning Receiver improves on existing radar warning receiver performance and improves Electronic Warfare (EW) threat detection range. ALR-69A is a modernization of key capability to support operational warfighting survivability in contested environments (NDS) by overhauling the non-digital/legacy F-16 Radar Warning Receiver migrating to digital radar	41.378	81.315	0.000

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
warning receiver (DRWR)/ALR-69A system with fiber optics and improved system sensitivity. The DRWR program also facilitates Sensor Integration Unit (SIU), a Radio Frequency Compatibility (RFC) solution, with associated systems. This program is necessary for the F-16 to meet the NDS requirement of operating in current and future contested environments. This digital radar warning receiver upgrade provides improved radio frequency threat situational awareness to aircrew and increases the performance in dense signal areas of operation as seen within contested environments. ***FY 2022 Plans:*** Continue development efforts to complete remaining Group A & B designs. Update/Finalize Blk 30/32C, 40C, 42C & 50/52C baseline configurations (Engineering & Technical Orders/Time Compliance Technical Orders) with Blk 40C, 42C & 50/52C kit-proofs. Begin fielding on Block 30/32C's, complete kit-proofs on Block 42C, 40C and 52C in that order. Finalize Blk 30/32C, 40C, 42C & 50/52C baseline configurations (Engineering & Technical Orders/Time Compliance Technical Orders) with Blk 40C, 42C & 50/52C kit-proofs. ***FY 2023 Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to the development and integration program.			
Title: Integrated Viper Electronic Warfare Suite (IVEWS)	0.000	0.000	63.224
Description: Integrated Viper Electronic Warfare System (IVEWS) previously justified as a sub-program under DRWR Cost Category as NGEW has been renamed and separated to an IVEWS Cost Category to continue development efforts. IVEWS is a Section 804 Middle Tier Acquisition program providing improved Digital Radar Warning Receiver performance and Active Jamming capability, with future growth upgrades, in an internal suite to keep the F-16 operationally viable to 2046+. This rapid acquisition program was initiated to design, develop, test, and produce a mature electronic warfare system that is internal to the F-16, interoperable with the Active Electronically Scanned Array radar, designed to Open Missions Systems Tier II requirements, and provisioned for long-term growth capability to support future upgrades such as Fiber Optic Towed Decoy, Adaptive/Cognitive Processing, and Open System Architecture compliance. This program is necessary for the F-16 to meet the NDS requirement of operating in current and future contested environments. ***FY 2022 Plans:*** Continue development efforts including Non-Recurring Engineering (NRE) activities, design, integration, demonstrations, and System Integration Lab (SIL) and Developmental and Operational (DT/OT) testing. ***FY 2023 Plans:***			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Continue development efforts including Non-Recurring Engineering (NRE) activities, design, integration, demonstrations, System Integration Lab (SIL), Developmental and Operational (DT/OT) testing, operational assessment (OA), Engineering and Manufacturing Development (EMD)/Integration. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to phasing of program requirements like Flight Test and Integration.			
Title: Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-JTRS) ***Description:*** Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-JTRS) provides real time, jam-resistant and secure information system for the transfer of combat data, voice, and navigation information between widely dispersed battle elements. MIDS-JTRS enhances situational awareness by exchanging digital data over a common communication link that is continuously and automatically updated in real time. Additionally MIDS-JTRS's enhanced capabilities provide concurrent multi-netting which enables Link 16 by adding capability to receive four messages in a single time slot and allows for greater network design flexibility along with concurrent receive capabilities and J-voice. The F-16 MIDS-JTRS effort is developing Ethernet connectivity within the terminal. This program maps to the NDS by providing crypto modernization for tactical networks and more secure command and control, thereby enabling increased interoperable communications across the joint force. This critical communications capability generates a more lethal force to defeat enemies and achieve sustainable outcomes to protect the American people and vital US interests. ***FY 2022 Plans:*** N/A ***FY 2023 Plans:*** The MIDS-JTRS terminal firmware will be upgraded from IB8.1.1.1 to IB8.2.1.1 in time for integration with existing F-16 OFP in FY23. Funding will be needed for lab integration testing to ensure compatibility between the terminal's new firmware and existing OFP software. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to phasing of program requirements.	0.000	0.000	0.157
Title: M Code ***Description:*** Modify F-16 USAF with PNT and M-Code capabilities. The current aircraft Embedded GPS/INS (EGI) system suffers from Diminishing Manufacturing Sources (DMS) shortfalls. New security requirements and mandated hardware support of items such as the M-Code compliance on aircraft drive the need for a new EGI solution to enable F-16 to support modern resilient weaponry and mission systems.	0.000	10.123	10.314

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: Development activities for design, integration, deliver test assets for SIL and flight test. ***FY 2023 Plans:*** Development activities for design, integration, deliver test assets for SIL and flight test. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase based on phasing of requirements.			
Accomplishments/Planned Programs Subtotals	197.641	225.573	244.696

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• APAF 05 Line Item F01600: *F-16 Aircraft Modifications*	622.593	613.166	627.634	-	627.634	555.681	626.656	302.846	-	Continuing	Continuing
• APAF 07 Line Item F0160P: *F-16 Post Production Support*	14.163	10.456	8.946	-	8.946	9.406	10.055	10.266	-	Continuing	Continuing
• APAF 06 Line Item F01600: *F-16 Initial Spares*	21.486	40.980	17.293	-	17.293	20.737	21.276	21.607	-	Continuing	Continuing

Remarks

E. Acquisition Strategy

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

F-16 OFP SW updates will continually bring new capabilities to the warfighter. OFP SW development effort is now completely developed organically at Hill AFB (309 SWEG). Numerous Integration contracts (CPFF, FFP) are required to allow for Improved Avionics, Weapon, AIFF Mode 5, MIDS-JTRS integration to successfully field with each OFP.

The upgraded MMC is a critical foundational component that will be the processing workhorse for the post-block fleet, bringing modern networking capability via Ethernet, and providing the necessary architecture upgrades for the modernization of the F-16 post-block fleet. The PDG Upgrade will provide a platform for video enhancements, add Ethernet connectivity, increase high-speed data, memory, and throughput, and support OFP growth through the remaining service life of the F-16.

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The EMD HW/Advanced capability improvements will develop, test, and qualify aircraft weapons systems, including subsystems and uses various contract types (Cost Plus and Fixed Price).

The Active Electronically Scanned Array (AESA) Joint Emergent Operational Need (JEON) contract for development and production of the APG-83 radar awarded to Northrop Grumman on 31 May 2017. The US Government is the prime integrator and a separate contract is established for Lockheed Martin to provide integration support.

AIFF Mode 5 program uses numerous contracts for DMS resolution, integration, production, support, and installs. Funding will be awarded on the following contracts: Harness IDIQ, Bracket IDIQ, Falcon 2020, and Mode 5 IDIQ.

DRWR is organically being integrated on the F-16 by F-16 System Program Office (AFLCMC/WWM) and the Electronic Warfare and Avionics (EW&A) System Program Office (AFLCMC/ WNY) at Robins AFB, GA. The ALR-69A production contract (managed by AFLCMC/WNY) was awarded on 30 March 2018 to Raytheon, Goleta, CA (CAGE CD 06129).

IVEWS is Section 804 Middle Tier Acquisition prototyping Other Transaction Authority (OTA) contract was awarded on 25 September 2019. The IVEWS program is being developed by Northrop Grumman (Rolling Meadows, IL).

The ALR-69A software is organically managed by AFLCMC/WNY utilizing the 579 SWES (Software Maintenance) team and the OEM Raytheon, Goleta, CA. The ALR-69A hardware is sustained by the 408 SCMS (Supply Chain) and 402 AMXG (Hardware Maintenance) at Robins AFB, GA.

Flight Test requires both organic test range support and contract support for modification integration testing of F-16 subsystems to ensure capabilities meet CAF fielding schedule.

M-Code is managed by AFLCMC/WNY the development is contracted to Integrated Solutions for Systems (IS4S). Contracts will be award to Harness IDIQ, Bracket IDIQ, Falcon 2020, and SAASM/EGI IDIQ for integration onto the F-16.

MIDS-JTRS terminal firmware updates will be tested at Hill AFB by the 309 SWEG OFP SW development team to ensure compatibility between the two software baselines.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/CPAF	Not Specified/TBD : TBD	-	0.000		-		-		-		-	Continuing	Continuing	-
OFP Updates on F-16 aircraft	Various	309th SMG : Hill AFB, UT	-	68.716	Oct 2020	57.157	Oct 2021	71.168	Oct 2022	-		71.168	Continuing	Continuing	-
MMC Upgrade / Display Generator Upgrade	Various	Various : Various	-	12.402	Nov 2020	4.145	Nov 2021	1.274	Nov 2022	-		1.274	Continuing	Continuing	-
Simulator Trainers	Various	Various : Various	-	9.569	Nov 2020	7.851	Nov 2021	15.768	Nov 2022	-		15.768	Continuing	Continuing	-
AIFF Mode 5	Various	Various : Various	-	11.176	Aug 2021	-		16.354	Nov 2022	-		16.354	Continuing	Continuing	-
AESA Radars	Various	Various : Various	-	26.617	Nov 2020	29.933	Nov 2021	29.467	Nov 2022	-		29.467	Continuing	Continuing	-
Digital Radar Warning Receiver	Various	Various : Various	-	41.378	Jun 2021	80.237	Mar 2022	-		-		-	Continuing	Continuing	-
IVEWS	Various	Various : Various	-	0.000	Jun 2021	0.000	Mar 2022	62.146	Mar 2023	-		62.146	Continuing	Continuing	-
Comm Suite Radio Upgrade	Various	Various : Various	-	1.835	Jan 2021	-		-		-		-	Continuing	Continuing	-
MIDS JTRS	Various	Various : Various	-	-		-		0.157	Nov 2022	-		0.157	Continuing	Continuing	-
EMD HW/Advanced Capabilities Improvements	Various	Various : Various	-	-		5.000		-		-		-	Continuing	Continuing	-
M Code	Various	Various : Various	-	-		10.123	Jan 2022	10.314	Jan 2023	-		10.314	Continuing	Continuing	-
		Subtotal	-	171.693		194.446		206.648		-		206.648	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Direct Cite Authority	Reqn	Various : Various	-	3.563	Oct 2020	7.127	Oct 2021	7.400	Oct 2022	-		7.400	Continuing	Continuing	-
		Subtotal	-	3.563		7.127		7.400		-		7.400	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207133F / *F-16 Squadrons*	Project (Number/Name) 672671 / *F-16 Squadrons*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	C/CPAF	Not Specified/TBD : TBD	-	0.000		-		-		-		-	Continuing	Continuing	-
Flight Tests	Various	Various : Various	-	13.335	Jan 2021	12.410	Jan 2022	18.118	Jan 2023	-		18.118	Continuing	Continuing	-
		Subtotal	-	13.335		12.410		18.118		-		18.118	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	C/CPAF	Not Specified/TBD : TBD	-	0.000		-		-		-		-	Continuing	Continuing	-
Program Mgmt Administrative (PMA) Support	Various	Various : Various	-	9.050	Dec 2020	11.590	Dec 2021	12.530	Dec 2022	-		12.530	Continuing	Continuing	-
		Subtotal	-	9.050		11.590		12.530		-		12.530	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	197.641		225.573		244.696		-		244.696	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207133F / *F-16 Squadrons*	**Project (Number/Name)** 672671 / *F-16 Squadrons*

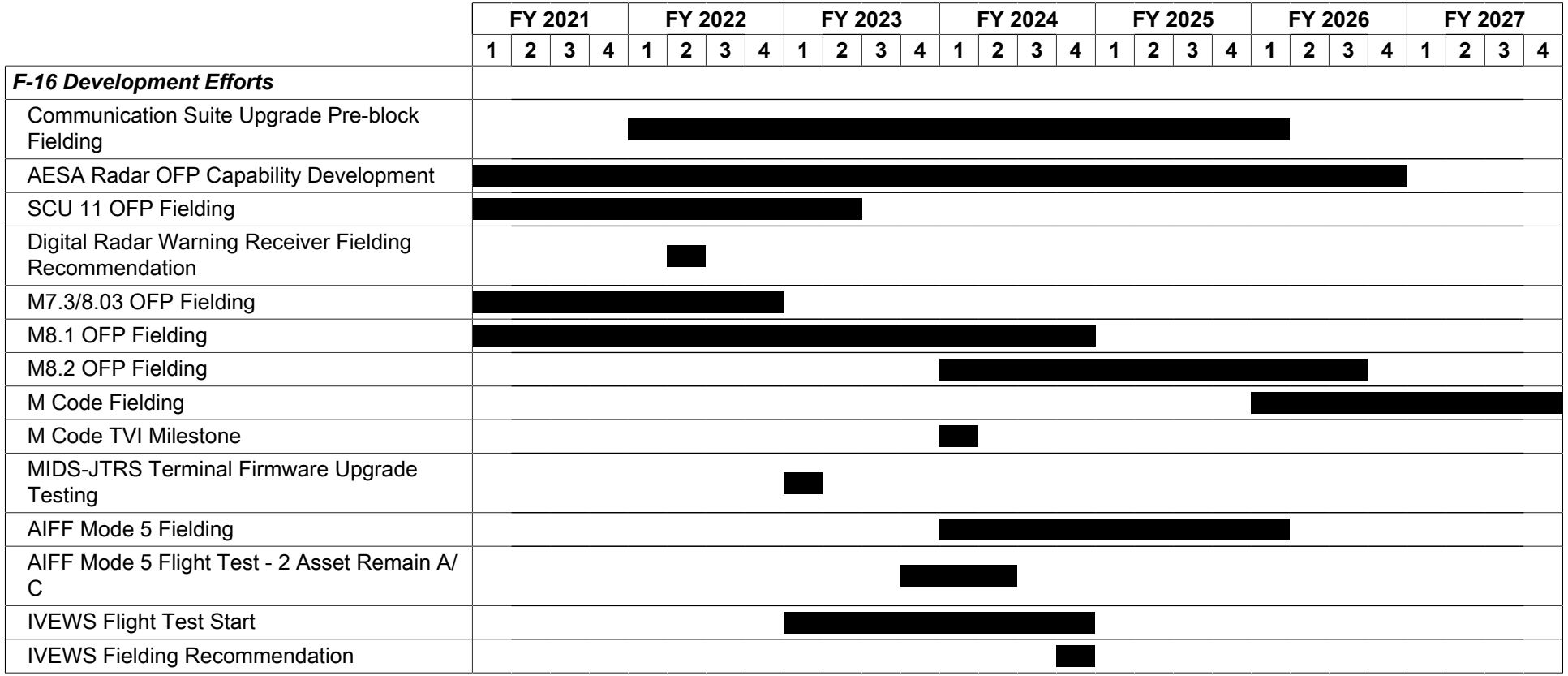

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207133F / *F-16 Squadrons*	**Project (Number/Name)** 672671 / *F-16 Squadrons*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
F-16 Development Efforts				
Communication Suite Upgrade Pre-block Fielding	1	2022	1	2026
AESA Radar OFP Capability Development	1	2021	4	2026
SCU 11 OFP Fielding	1	2021	2	2023
Digital Radar Warning Receiver Fielding Recommendation	2	2022	2	2022
M7.3/8.03 OFP Fielding	1	2021	4	2022
M8.1 OFP Fielding	1	2021	4	2024
M8.2 OFP Fielding	1	2024	3	2026
M Code Fielding	1	2026	4	2027
M Code TVI Milestone	1	2024	1	2024
MIDS-JTRS Terminal Firmware Upgrade Testing	1	2023	1	2023
AIFF Mode 5 Fielding	1	2024	1	2026
AIFF Mode 5 Flight Test - 2 Asset Remain A/C	4	2023	2	2024
IVEWS Flight Test Start	1	2023	4	2024
IVEWS Fielding Recommendation	4	2024	4	2024