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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207133F / <i>F-16 Squadrons</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	221.838	247.536	98.633	0.000	98.633	117.307	113.747	109.784	112.589	0.000	1,021.434
672671: <i>F-16 Squadrons</i>	-	221.838	247.536	98.633	0.000	98.633	117.307	113.747	109.784	112.589	0.000	1,021.434
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier fixed-wing, high performance, single engine, multi-mission fighter aircraft comprising 41% 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 28 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. The 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. The 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 capabilities, addresses cyber-security, includes Non-Recurring Engineering (NRE), design, development, integration, and ground/ flight test for fielding. The 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. The 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. The 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. The 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. The Advanced Identification Friend or Foe (AIFF-Mode 5) on F-16 aircraft provides improved positive identification for Air Traffic Control reporting, combat targeting, and fratricide prevention. The 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)/Sensor Integration Unit (SIU) issues with other on board transmitters. Integrated Viper Electronic Warfare Suite (IVEWS) previously justified under DRWR as Next Gen EW (NGEW) Suite is a section 804 Middle Tier rapid

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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 was 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 IVEWS Middle Tier of Acquisition effort is \$519.29M, including RDT&E and procurement of prototype units. IVEWS 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.

The FY 2024 funding request was reduced by \$20.535 million to account for the availability of prior year execution balances

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver F-16 Fighting Falcon for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0207133F, 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2022 \$6.141M was expended for civilian pay expenses in this program element, and in FY2023 \$7.500M 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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	225.573	244.696	183.185	0.000	183.185
Current President's Budget	221.838	247.536	98.633	0.000	98.633
Total Adjustments	-3.735	2.840	-84.552	0.000	-84.552
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	2.840			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	1.219	0.000			
• SBIR/STTR Transfer	-4.954	0.000			
• Other Adjustments	0.000	0.000	-84.552	0.000	-84.552

Change Summary Explanation

FY22 adjustments include -4.954 for Small Business Innovative Research (SBIR) and various reprogrammings
 FY23 increase for \$5M for lithium battery replacement for F-16 hydrazine emergency power units
 FY24 adjustments to the Simulator Training Program, AIFF Mode 5, AESA Radar, and IVEWS programs

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Title: OFP Updates on all F-16 aircraft</p> <p>Description: OFP versions are updated continually to integrate new weapons, targeting pods, and improved avionics. Increment 2 OFP is comprised of annual OFP production releases consisting of pre-block called "SCU" and post-block "M-Series" software releases. FY24 development focuses on design and coding of software via an agile incremental cadence of one year. 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.</p> <p>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 Increment 1 and runs FY24 through FY27.</p> <p>FY 2024 Plans: Develop requirements and Field Increment 2 (spans FY24-FY27) capability while maintaining and upgrading portions of the SIL. Bolster Cyber Security defenses and implement secure network infrastructure to enable large data transfers between CONUS and OCONUS bases. Provide secure data management/cloud services for storage of large amounts of flight test/operational data.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decreased due to the phasing of the program requirements.</p>		78.344	89.889	79.151
<p>Title: Flight Test</p> <p>Description: Funds F-16 Development and Operational flight test including sorties, test infrastructure, range support, aircraft maintenance, test aircraft modifications, instrumentation, test planning, analysis and test reports required to complete F-16 OFP software and development/ integration hardware.</p> <p>FY 2023 Plans: Support F-16 OFP DT/OT flight test of M7.22 and AESA DT/OT at Eglin, Edwards, Nellis AFBs. Supports F-16 DT/OT infrastructure, facilities, contractor support and personnel to enable all other F-16 flight test at Eglin, Edwards AFB's. In addition funds instrumentation updates and relocation due to Communications Suite Upgrade and IVEWS EW programs displacing where</p>		14.104	18.118	11.037

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>current aircraft DT/OT instrumentation is installed. Includes additional funding to purchase captive carry weapon integration assets for GBU-39 SDB, JASSM-ER, and other weapons for F-16 OFP update DT/OT. Current captive weapons have exceeded captive carry life and require replacement.</p> <p>FY 2024 Plans: Complete F-16 OFP DT/OT flight test of M7.22 and AESA DT/OT at Eglin, Edwards, Nellis AFBs. Support F-16 OFP DT/OT flight test of M8.1 OFP Rehost, MMC upgrade, PDG upgrade, HSDN (ethernet), SMDS including Auto GCAS, and AESA DT/OT at Eglin, Edwards, Nellis AFBs. Supports F-16 DT/OT infrastructure, facilities, contractor support and personnel to enable all other F-16 flight test at Eglin, Edwards AFB's. Flight test support for critical AESA combat Identification, and Maritime capabilities requested by ACC. Continues instrumentation updates and relocation due to Communications Suite Upgrade and IVEWS EW programs displacing DT/OT instrumentation for additional test aircraft. Purchase captive carry weapon integration assets for GBU-39 SDB, JASSM-ER, and other weapons for F-16 OFP update DT/OT.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding for all F-16 DT/OT flight test reduced</p>				
<p>Title: EMD HW/Advanced Capabilities Improvements</p> <p>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, and battery replacement.</p> <p>FY 2023 Plans: Complete battery replacement analysis and prototype. Complete static bench testing.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY23 amount was a Congressional Add. No funding is planned for FY24.</p>		4.890	5.000	0.000
<p>Title: Modular Mission Computer (MMC) / Programmable Display Generator (PDG) Upgrade on F-16 aircraft</p> <p>Description: The MMC upgrade on the F-16 post-block aircraft, (Blk 40, 42, 50, 52) resolves shortfalls in mission computer processing, memory and throughput. MMC upgrade also incorporates new cybersecurity protection for avionics sub-systems. The MMC upgrade is the key component to support full AESA Radar capability. 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),</p>		6.590	1.274	0.986

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>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.</p> <p>FY 2023 Plans: MMC will continue software testing, cybersecurity assurance and validation for the initial hardware fielding timeline. PDG will complete 2 test vehicles installs, 1 kit proof, continue software testing and validation for initial hardware fielding timeline.</p> <p>FY 2024 Plans: MMC will complete cybersecurity protection implementation, code rehost support for AESA radar candidates, software testing and code validation for the post-rehost supportable software. PDG will complete software testing and code validation for the post-rehost supportable software.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to completing RDT&E in FY24.</p>				
<p>Title: Simulator Trainers Program (STP)</p> <p>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 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.</p> <p>FY 2023 Plans:</p>		7.678	15.768	0.100

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>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.</p> <p>FY 2024 Plans: Continue necessary development activities in accordance with F-16 modernization roadmap.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: F-16 Simulator Training Program efforts reduced</p>				
<p>Title: AIFF Mode 5</p> <p>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 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.</p> <p>FY 2023 Plans: Continue the development and begin/conclude testing of the APX-127</p> <p>FY 2024 Plans: Continue necessary development activities in accordance with F-16 modernization roadmap.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: AIFF Mode 5 Program has minimal requirements to ramp down development activities.</p>		4.000	16.354	0.100
<p>Title: AESA Radar</p> <p>Description: 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 (OFF)</p>		26.122	29.598	0.100

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
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 2023 Plans: Continue Phase III development and test efforts for full CDD radar capabilities. Support initial fielding of Phase III radars.				
FY 2024 Plans: Continue necessary development activities in accordance with F-16 modernization roadmap.				
FY 2023 to FY 2024 Increase/Decrease Statement: F-16 AESA Program has minimal requirements to ramp down development activities.				
Title: Comm Suite Radio Upgrade Aircraft		1.804	0.000	0.000
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 2023 Plans: N/A				
FY 2024 Plans: N/A				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Title: Digital Radar Warning Receiver		75.428	0.000	0.000
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 by overhauling the non-digital/legacy F-16 Radar Warning Receiver migrating to digital radar 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. 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				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
F-16 operationally viable beyond 2046. IVEWS has been separated to an additional Cost Category to continue development starting in FY23 and now has a separate mod line, IVEWS P-3A Mod 633035.				
FY 2023 Plans: N/A				
FY 2024 Plans: N/A				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Title: Integrated Viper Electronic Warfare Suite (IVEWS)		0.000	61.064	0.100
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 operate in current and future contested environments.				
FY 2023 Plans: 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 2024 Plans: Continue necessary development activities in accordance with F-16 modernization roadmap.				
FY 2023 to FY 2024 Increase/Decrease Statement: F-16 IVEWS efforts reduced				
Title: Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-JTRS)		0.000	0.157	0.100
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				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>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.</p> <p>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.</p> <p>FY 2024 Plans: Continue necessary development activities in accordance with F-16 modernization roadmap.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to RDT&E phase completion.</p>				
<p>Title: M Code</p> <p>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.</p> <p>FY 2023 Plans: Development activities for NRE and Integration.</p> <p>FY 2024 Plans: Development activities for design, integration, deliver test assets for SIL and flight test.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to test stand buy in prior year, FY24 largely test stand and flight testing</p>		2.878	10.314	6.959
Accomplishments/Planned Programs Subtotals		221.838	247.536	98.633

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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 Line Item F01600: <i>F-16 Aircraft Modifications</i>	599.320	741.334	297.342	-	297.342	334.863	807.886	580.217	353.511	0.000	3,714.473
• APAF 07 Line Item F0160P: <i>F-16 Post Production Support</i>	10.456	5.102	1.075	-	1.075	0.865	0.411	0.000	0.000	0.000	17.909
• APAF 06 Line Item <i>F01600: F-16 Initial Spares</i>	40.602	20.482	8.271	-	8.271	2.593	1.078	0.000	7.816	0.000	80.842

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.

F-16 Flight Test Instrumentation for capturing flight test data to allow generation of program FRP decisions. Program FT jet modifications including integration with depot maintenance, and A and B kits deliveries are tracked in the Test Aircraft Modification Schedule (TAMS) and correlate directly with program schedules.

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. Raytheon is the Prime with Cost Plus Fixed Fee contract for development, and a Firm Fixed Priced contract for Production.

PDG 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. General Dynmaics is the Prime with Cost Plus Fixed Fee contract for development, and a Firm Fixed Priced contract for Production.

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, Lockheed Martin Falcon Enterprise, and Mode 5 IDIQ.

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R-1 Program Element (Number/Name)
PE 0207133F / *F-16 Squadrons*

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. AESA JEON completed Mar 22. Program is now outfitting the Combat Air Force (CAF) and ANG aircraft for Phase III for installs

DRWR is organically being integrated on the F-16 by F-16 System Program Office (AFLCMC/WAM) 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). 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.

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.

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).

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 Electronic Warfare Radar Frequency Compatibility (EWRFC) awarded on Mar 9, 2022, extends development beyond the OTA with a period of performance end date of Sep 30, 2023. EWRFC provides continued rapid prototyping efforts and procurement of Engineering Manufacture and Design (EMD) hardware used in flight test aircraft.

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). Multiple contracts will be awarded on the Harness IDIQ, Bracket IDIQ, Lockheed Martin Falcon Enterprise, and SAASM/EGI IDIQ for integration onto the F-16.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207133F / F-16 Squadrons	Project (Number/Name) 672671 / F-16 Squadrons
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OFP Updates on F-16 aircraft	Various	309th SMG : Hill AFB, UT	-	63.388	Oct 2021	69.859	Oct 2022	61.441	Oct 2023	-		61.441	Continuing	Continuing	-
MMC Upgrade / Display Generator Upgrade	Various	Various : Various	-	6.590	Nov 2021	1.274	Nov 2022	0.986	Nov 2023	-		0.986	Continuing	Continuing	-
Simulator Trainers	Various	Various : Various	-	7.678	Nov 2021	15.768	Nov 2022	0.100	Nov 2023	-		0.100	0.000	23.546	-
AIFF Mode 5	Various	Various : Various	-	4.000	Jul 2022	16.354	Nov 2022	0.100	Nov 2023	-		0.100	0.000	20.454	-
Digital Radar Warning Receiver	Various	Various : Various	-	74.350	Mar 2022	-		-		-		-	0.000	74.350	-
AESA Radars	Various	Various : Various	-	25.991	Nov 2021	29.598	Nov 2022	0.100	Nov 2023	-		0.100	0.000	55.689	-
Comm Suite Radio Upgrade	Various	Various : Various	-	1.804	Jan 2023	-		-		-		-	0.000	1.804	-
MIDS JTRS	Various	Various : Various	-	-		0.157	Nov 2022	0.100	Nov 2023	-		0.100	0.000	0.257	-
EMD HW/Advanced Capabilities Improvements	Various	Various : Various	-	4.890	Mar 2023	5.000	Jul 2024	-		-		-	0.000	9.890	-
IVEWS	Various	Various : Various	-	0.000	Mar 2022	61.064	Mar 2023	0.100	Mar 2024	-		0.100	Continuing	Continuing	-
M Code	Various	Various : Various	-	2.878	Jan 2022	10.314	Jan 2023	6.959	Jan 2024	-		6.959	Continuing	Continuing	-
Subtotal			-	191.569		209.388		69.886		-		69.886	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority	Reqn	Various : Various	-	6.141	Oct 2021	7.500	Oct 2022	7.686	Oct 2023	-		7.686	Continuing	Continuing	-
Subtotal			-	6.141		7.500		7.686		-		7.686	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Tests	Various	Various : Various	-	14.182	Jan 2022	18.118	Jan 2023	11.037	Jan 2024	-		11.037	0.000	43.337	-
Subtotal			-	14.182		18.118		11.037		-		11.037	0.000	43.337	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207133F / <i>F-16 Squadrons</i>	Project (Number/Name) 672671 / <i>F-16 Squadrons</i>
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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>F-16 Development Efforts</i>																												
AESA Radar OFP Capability Development																												
OFP Inc 1 SCU 11 OFP Fielding																												
Digital Radar Warning Receiver Fielding Recommendation																												
OFP Inc 1 M7.3/M7.22/M7.23 OFP Fielding																												
OFP Inc 1 M8.1 OFP Fielding																												
OFP Inc 2 M8.2 OFP Fielding																												
AIFF Mode 5 Flight Test - 2 Asset Remain A/C																												
IVEWS Flight Test Start																												
IVEWS Fielding Recommendation																												
OFP Inc 1 SCU 12 OFP Fielding																												
OFP Inc 1 SCU 12 DT/OT																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207133F / <i>F-16 Squadrons</i>	Project (Number/Name) 672671 / <i>F-16 Squadrons</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>F-16 Development Efforts</i>				
AESA Radar OFP Capability Development	1	2022	4	2023
OFP Inc 1 SCU 11 OFP Fielding	1	2022	3	2023
Digital Radar Warning Receiver Fielding Recommendation	1	2023	1	2023
OFP Inc 1 M7.3/M7.22/M7.23 OFP Fielding	1	2022	2	2025
OFP Inc 1 M8.1 OFP Fielding	1	2022	4	2026
OFP Inc 2 M8.2 OFP Fielding	1	2027	4	2028
AIFF Mode 5 Flight Test - 2 Asset Remain A/C	4	2023	2	2024
IVEWS Flight Test Start	1	2023	4	2023
IVEWS Fielding Recommendation	4	2024	4	2024
OFP Inc 1 SCU 12 OFP Fielding	4	2023	4	2024
OFP Inc 1 SCU 12 DT/OT	4	2022	4	2023