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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2021 Air Force **Date:** February 2020

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605712F / <i>Initial Operational Test &amp; Evaluation</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	17.383	13.793	13.557	0.000	13.557	14.233	14.487	14.417	14.682	Continuing	Continuing
660191: <i>Initial Operational Test and Eval</i>	-	17.383	13.793	13.557	0.000	13.557	14.233	14.487	14.417	14.682	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program element funds Congressionally mandated Initial Operational Test and Evaluation (IOT&E) to support major weapon system acquisition decisions beyond Low-Rate Initial Production (LRIP), Milestone C, full rate production, fielding, and declaration of Initial Operational Capability (IOC). For Major Defense Acquisition Programs (MDAP), the law requires IOT&E be completed under realistic operating conditions before proceeding beyond LRIP. IOT&E will be planned to answer all critical operational issues (COI) as thoroughly as possible. IOT&E is conducted to determine the operational effectiveness and suitability and resolve overall mission capability of systems undergoing research and development (R&D) efforts. It is an evaluation of a system's performance when the complete system is tested and evaluated against operational criteria by personnel with the same qualifications as those who will operate, maintain and support the system when deployed. In general, IOT&E is performed on new systems in development, major modifications, and other systems as directed. This PE funds the Air Force Operational Test Agency's participation in Integrated Test and Evaluation (IT&E), Multiservice Operational Test and Evaluation (MOT&E), and Follow-on Operational Test and Evaluation (FOT&E) when it is the continuation of IOT&E activities past the full rate production decision. FOT&E answers specific questions about unresolved COIs and test issues or completes areas not finished during the IOT&E. This PE also funds related operational test and evaluation (OT&E) activities such as Early Influence, Operational Utility Evaluations (OUE), Early Operational Assessments (EOA), and Operational Assessments (OA) which are independent OT&Es supporting major milestones and decision points prior to Milestone C, full rate production, fielding, or declaration of IOC. IOT&E programs are identified in several system categories: Air; Space; Weapons; Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR); and Combat Support. This program element is driven by Congressional and DoD acquisition mandated requirements for operational testing. AFOTEC schedules and executes tests according to the forecasted test readiness of the MDAP program offices.

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	18.043	13.793	16.497	0.000	16.497
Current President's Budget	17.383	13.793	13.557	0.000	13.557
Total Adjustments	-0.660	0.000	-2.940	0.000	-2.940
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.660	0.000			
• Other Adjustments	0.000	0.000	-2.940	0.000	-2.940

**Change Summary Explanation**

FY21: \$2.5 million decrease is a correction for a FY20 adjustment associated with the Weapon System Evaluation Program (WSEP) incorrectly added to PE 65712.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> Air Systems OT&E	2.397	1.392	5.411
<b>Description:</b> Plan, execute and report OT&E for Air Systems			
<b>FY 2020 Plans:</b>			
-Airborne Warning and Control System (AWACS) Block 40/45: Plan for FOT&E			
-B-52 Commercial Engine Replacement Program (B-52 CERP): Conduct early influence			
-B-52 Radar Modernization Program (B-52 RMP): Conduct early influence			
-Combat Rescue Helicopter (CRH): Plan for IOT&E			
-F-15 Eagle Passive and Active Warning and Survivability System (F-15 EPAWSS): Conduct OA			
-Global Hawk Ground Segment Modernization Program GH GSMP): Conduct OA			
-KC-46A: Complete IOT&E			
-MH-139: Conduct OA			
-RQ-4B Global Hawk Block 30 Multi-Spectral Intelligence (MSI): Plan for IOT&E			
-T-7A (formerly Advanced Pilot Training (APT T-X)): Conduct early influence			
-VC-25B (formerly PAR): Plan for OA			
-Conduct other planning and operational testing for new air system programs as the requirement becomes known to AFOTEC			
<b>FY 2021 Plans:</b>			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<ul style="list-style-type: none"> <li>-Airborne Warning and Control System (AWACS) Block 40/45: Conduct FOT&amp;E</li> <li>-B-52 Commercial Engine Replacement Program (B-52 CERP): Conduct early influence</li> <li>-B-52 Radar Modernization Program (B-52 RMP): Plan for OA</li> <li>-Combat Rescue Helicopter (CRH): Conduct IOT&amp;E</li> <li>-F-15 Eagle Passive and Active Warning and Survivability System (F-15 EPAWSS): Plan for IOT&amp;E</li> <li>-Global Hawk Ground Segment Modernization Program GH GSMP): Conduct IOT&amp;E</li> <li>-MH-139: Conduct IOT&amp;E</li> <li>-RQ-4B Global Hawk Block 30 Multi-Spectral Intelligence (MSI): Conduct IOT&amp;E</li> <li>-T-7A (formerly Advanced Pilot Training (APT T-X)): Plan for OA</li> <li>-VC-25B (formerly PAR): Conduct OA</li> <li>-Conduct other planning and operational testing for new air system programs as the requirement becomes known to AFOTEC</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Test requirements increase in FY2021.</p>				
<p><b>Title:</b> Space Systems OT&amp;E</p> <p><b>Description:</b> Plan, execute and report OT&amp;E for Space Systems</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>-Advanced Extremely High Frequency Satellite Communications (Advanced EHF): Conduct early influence</li> <li>-Evolved Strategic SATCOM (ESS): Conduct early influence</li> <li>-Global Positioning System Block III (GPS III): Conduct OUE</li> <li>-Military GPS User Equipment (GPS MGUE): Conduct OUE</li> <li>-Global Positioning System III Contingency Operations (GPS III COps): Conduct OUE</li> <li>-Global Positioning System Military-Code Early Use (GPS MCEU): Conduct OUE</li> <li>-GPS Next Generation Control Segment (GPS OCX): Conduct early influence</li> <li>-Integrated Strategic Planning and Analysis Network Increment 5 (ISPAN Inc 5): Conduct agile release tests</li> <li>-Long-Range Discrimination Radar (LRDR): Plan for IOT&amp;E</li> <li>-Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Conduct OA</li> <li>-Protected Tactical Enterprise Service (PTES): Conduct MOT&amp;E</li> <li>-Protected Tactical SATCOM (PTS): Conduct early influence</li> <li>-Space Based Infrared System (SBIRS): Conduct early influence</li> <li>-Space C2 (formerly JMS): Conduct IOT&amp;E</li> <li>-Weather System Follow-On Microwave (WSF-M): Plan for OA</li> </ul>		1.296	2.737	1.932

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p>-Conduct other planning and operational testing for new space system programs as the requirement becomes known to AFOTEC</p> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>-Advanced Extremely High Frequency Satellite Communications (Advanced EHF): Conduct early influence</li> <li>-Evolved Strategic SATCOM (ESS): Conduct early influence</li> <li>-Military GPS User Equipment (GPS MGUE): Conduct OUE 2</li> <li>-GPS Next Generation Control Segment (GPS OCX): Plan for MOT&amp;E</li> <li>-Integrated Strategic Planning and Analysis Network Increment 5 (ISPAN Inc 5): Conduct agile release tests</li> <li>-Long-Range Discrimination Radar (LRDR): Conduct IOT&amp;E</li> <li>-Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Conduct OA</li> <li>-Protected Tactical Enterprise Service (PTES): Complete MOT&amp;E</li> <li>-Protected Tactical SATCOM (PTS): Plan for EOA</li> <li>-Space Based Infrared System (SBIRS): Conduct early influence</li> <li>-Space C2 (formerly JMS): Complete IOT&amp;E</li> <li>-Weather System Follow-On Microwave (WSF-M): Conduct OA</li> <li>-Conduct other planning and operational testing for new space system programs as the requirement becomes known to AFOTEC</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Test requirements decrease in FY2021.</p>				
<p><b>Title:</b> Weapons Systems OT&amp;E</p> <p><b>Description:</b> Plan, execute and report OT&amp;E for Weapons Systems</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>-AIM 120D System Improvement Program 3 (AIM-120D SIP-3): Conduct MOT&amp;E</li> <li>-AIM-9X Block II 9.4xx (AIM-9X Blk II 9.4xx): Conduct FOT&amp;E</li> <li>-Air Launched Rapid Response Weapon (ARRW): Conduct early influence</li> <li>-Hypersonic Conventional Strike Weapon (HCSW): Conduct early influence</li> <li>-Inter-Continental Ballistic Missile Fuze (ICBM FUZE): Plan for OA</li> <li>-Small Diameter Bomb II (SDB II): Complete MOT&amp;E</li> <li>-Conduct other planning and operational testing for new weapons system programs as the requirement becomes known to AFOTEC</li> </ul> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>-AIM 120D System Improvement Program 3 (AIM-120D SIP-3): Complete MOT&amp;E</li> <li>-Air Launched Rapid Response Weapon (ARRW): Conduct early influence</li> </ul>		4.169	2.772	1.460

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<ul style="list-style-type: none"> <li>-Hypersonic Conventional Strike Weapon (HCSW): Conduct early influence</li> <li>-Inter-Continental Ballistic Missile Fuze (ICBM FUZE): Conduct OA</li> <li>-Small Diameter Bomb II (SDB II): Conduct MOT&amp;E 2</li> <li>-Conduct other planning and operational testing for new weapons system programs as the requirement becomes known to AFOTEC</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Test requirements decrease in FY2021.</p>				
<p><b>Title:</b> C4ISR Systems OT&amp;E</p> <p><b>Description:</b> Plan, execute and report OT&amp;E for C4ISR Systems</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>-Air Force Integrated Personnel and Pay System (AFIPPS): Plan for IOT&amp;E 1</li> <li>-AN/TPS-81 (Three Dimensional Expeditionary Long Range Radar (3DELRR)): Conduct early involvement</li> <li>-Air Operations Center Weapon System Modification Program (AOC WS Mod): Conduct OUE 1</li> <li>-Distributed Common Ground System (DCGS): Conduct OUEs 20-1, 20-2, 20-3, 20-4</li> <li>-Family of Advanced Beyond Line Of Sight Terminals (FAB T): Conduct IOT&amp;E</li> <li>-Nuclear Planning and Execution System Recapitalization (NPES): Conduct Release tests</li> <li>-Presidential and National Voice Conferencing (PNVC): Conduct early involvement</li> <li>-RQ-4 Global Hawk Block 30/Airborne Signals Intelligence Payload (ASIP): Conduct FOT&amp;E 1</li> <li>-Unified Platform (UP): Conduct Release tests</li> <li>-Wide Area Surveillance (WAS): Conduct IOT&amp;E</li> <li>-Conduct other planning and operational testing for new C4ISR programs as the requirement becomes known to AFOTEC</li> </ul> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>-Air Force Integrated Personnel and Pay System (AFIPPS): Conduct IOT&amp;E 1</li> <li>-AN/TPS-81 (Three Dimensional Expeditionary Long Range Radar (3DELRR)): Plan for OA</li> <li>-Air Operations Center Weapon System Modification Program (AOC WS Mod): Plan for OUE 2</li> <li>-Distributed Common Ground System (DCGS): Conduct OUEs 21-1, 22-2, 22-3, 22-4</li> <li>-Family of Advanced Beyond Line Of Sight Terminals (FAB T): Plan for FOT&amp;E</li> <li>-Nuclear Planning and Execution System Recapitalization (NPES): Conduct Release tests</li> <li>-Presidential and National Voice Conferencing (PNVC): Plan for MOT&amp;E</li> <li>-RQ-4 Global Hawk Block 30/Airborne Signals Intelligence Payload (ASIP): Conduct FOT&amp;E 2</li> <li>-Unified Platform (UP): Conduct Release tests</li> </ul>		4.432	6.497	4.081

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p>-Wide Area Surveillance (WAS): Conduct FOT&amp;E</p> <p>-Conduct other planning and operational testing for new C4ISR programs as the requirement becomes known to AFOTEC</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Test requirements decrease in FY2021.</p>				
<p><b>Title:</b> Combat Support OT&amp;E</p> <p><b>Description:</b> Plan, execute and report OT&amp;E for Combat Support OT&amp;E</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>-Common Munitions Built-In Test Reprogramming Equipment Service Life Extension Program (CMBRE SLEP): Conduct early involvement</li> <li>-Deliberate and Crisis Action Planning and Execution Segments Increment 2B (DCAPES Inc 2B): Conduct OUE 1, 2</li> <li>-Military GPS User Equipment Inc 2 Handheld (MGUE Inc 2 HH): Conduct early involvement</li> <li>-Maintenance, Repair, and Overhaul Initiative (MROI): Plan for IOT&amp;E</li> <li>-Conduct other planning and operational testing for new combat support programs as the requirement becomes known to AFOTEC</li> </ul> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>-Common Munitions Built-In Test Reprogramming Equipment Service Life Extension Program (CMBRE SLEP): Plan for OUE</li> <li>-Deliberate and Crisis Action Planning and Execution Segments Increment 2B (DCAPES Inc 2B): Conduct OUE 3, 4</li> <li>-Military GPS User Equipment Inc 2 Handheld (MGUE Inc 2 HH): Conduct early involvement</li> <li>-Maintenance, Repair, and Overhaul Initiative (MROI): Conduct IOT&amp;E</li> <li>-Conduct other planning and operational testing for new combat support programs as the requirement becomes known to AFOTEC</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Not applicable.</p>		0.126	0.395	0.673
<p><b>Title:</b> NDAA 1647 Cyber Testing</p> <p><b>Description:</b> Plan and execute Congressional, DoD and Air Force mandated cyber security testing on AFOTEC programs for NDAA 1647 effort.</p> <p><b>FY 2020 Plans:</b> None</p> <p><b>FY 2021 Plans:</b></p>		4.963	0.000	0.000

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2019	FY 2020	FY 2021
None			
<b>Accomplishments/Planned Programs Subtotals</b>	17.383	13.793	13.557

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
N/A