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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 6: RDT&E Management Support					R-1 Program Element (Number/Name) PE 0605712F I Initial Operational Test & Evaluation							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	15.523	18.043	13.793	0.000	13.793	16.497	16.754	14.513	14.445	Continuing	Continuing
660191: Initial Operational Test and Eval	-	15.523	18.043	13.793	0.000	13.793	16.497	16.754	14.513	14.445	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.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	15.523	18.043	13.793	0.000	13.793
Current President's Budget	15.523	18.043	13.793	0.000	13.793
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• 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	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000
C. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
Title: Air Systems OT&E			5.415	2.397	5.140
Description: Plan, execute and report OT&E for Air Systems					
FY 2019 Plans:					
-Advanced Pilot Training (APT T-X): Conduct OA					
-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					
-C-130J Block Upgrade 8.1: Complete IOT&E					
-Combat Rescue Helicopter (CRH): Conduct OA					
-(Diminishing Manufacturing Sources) Replacement of Avionics for Global Operations and Navigation (E-3 DRAGON): Conduct IOT&E					
-F-15 Eagle Passive and Active Warning and Survivability System (F-15 EPAWSS): Plan for OA					
-F-15 Infrared Search and Track System (F-15 IRST): Conduct OA					
-Global Hawk Ground Segment Modernization Program GH GSMP): Conduct OA					
-JSTARS Recapitalization: Conduct OA					
-KC-46A: Conduct IOT&E					
-MQ-9 Reaper Hunter-Killer Block 50 Ground Control Station (MQ-9 Block 50 GCS): Plan for OA					
-RQ-4B Global Hawk Block 30 Multi-Spectral Intelligence (MSI): Conduct OUE					
-UH-1N Replacement: Plan for OA					
-VC-25B (formerly PAR): Plan for OA					

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
-Conduct other planning and operational testing for new air system programs as the requirement becomes known to AFOTEC  <b>FY 2020 Plans:</b> -Advanced Pilot Training (APT T-X): Plan for OA2 -Airborne Warning and Control System (AWACS) Block 40/45: Conduct 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 -F-15 Infrared Search and Track System (F-15 IRST): Complete OA -Global Hawk Ground Segment Modernization Program GH GSMP): Plan for IOT&E -JSTARS Recapitalization: Plan for OA2 -KC-46A: Complete IOT&E -MQ-9 Reaper Hunter-Killer Block 50 Ground Control Station (MQ-9 Block 50 GCS): Conduct OA -RQ-4B Global Hawk Block 30 Multi-Spectral Intelligence (MSI): Plan for IOT&E -UH-1N Replacement: Conduct OA -VC-25B (formerly PAR): Conduct OA -Conduct other planning and operational testing for new air system programs as the requirement becomes known to AFOTEC  <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Increase due to more extensive requirements and thus more costly scheduled test work.				
<b>Title:</b> Space Systems OT&E  <b>Description:</b> Plan, execute and report OT&E for Space Systems  <b>FY 2019 Plans:</b> -Advanced Extremely High Frequency Satellite Communications (Advanced EHF): Conduct early influence -Airborne Launch Control System Replacement (ALCS-R): Plan for EOA -Enhanced Polar System (EPS): Conduct MOT&E -Evolved Strategic SATCOM (ESS): Conduct early influence -Global Positioning System Block III (GPS III): Plan for OUE -Military GPS User Equipment (GPS MGUE): Conduct OA -Global Positioning System III Contingency Operations (GPS III COps): Plan for OUE -Global Positioning System Military-Code Early Use (GPS MCEU): Plan for OUE -GPS Next Generation Control Segment (GPS OCX): Conduct early influence		3.090	1.296	1.956

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
-Integrated Strategic Planning and Analysis Network Increment 5 (ISPAN Inc 5): Conduct agile release tests -Joint Space Operations Center (JSpOC) Mission System (JMS): Conduct IOT&E -Long-Range Discrimination Radar (LRDR): Conduct early influence -Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Conduct early influence -Protected Tactical Enterprise Service (PTES): Conduct MOT&E -Protected Tactical SATCOM (PTS): Conduct early influence -Space Based Infrared System (SBIRS): Conduct IOT&E -Space Fence: Conduct IOT&E -Weather System Follow-On Microwave (WSF-M): Conduct EOA -Conduct other planning and operational testing for new space system programs as the requirement becomes known to AFOTEC operational testing for new space system programs as the requirement becomes known to AFOTEC  <b>FY 2020 Plans:</b> -Advanced Extremely High Frequency Satellite Communications (Advanced EHF): Conduct early influence -Airborne Launch Control System Replacement (ALCS-R): Conduct EOA -Evolved Strategic SATCOM (ESS): Conduct early influence -Global Positioning System Block III (GPS III): Conduct OUE -Military GPS User Equipment (GPS MGUE): Plan for OUE -Global Positioning System III Contingency Operations (GPS III COps): Conduct OUE -Global Positioning System Military-Code Early Use (GPS MCEU): Conduct OUE -GPS Next Generation Control Segment (GPS OCX): Conduct early influence -Integrated Strategic Planning and Analysis Network Increment 5 (ISPAN Inc 5): Conduct agile release tests -Long-Range Discrimination Radar (LRDR): Plan for IOT&E -Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Conduct early influence -Protected Tactical Enterprise Service (PTES): Complete MOT&E -Protected Tactical SATCOM (PTS): Plan for EOA -Space Based Infrared System (SBIRS): Plan for IOT&E2 -Weather System Follow-On Microwave (WSF-M): Plan for OA -Conduct other planning and operational testing for new space system programs as the requirement becomes known to AFOTEC  <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Increase due to more extensive requirements and thus more costly scheduled test work.				
<b>Title:</b> Weapons Systems OT&E  <b>Description:</b> Plan, execute and report OT&E for Weapons Systems		5.531	5.101	2.607

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<b><i>FY 2019 Plans:</i></b> -AIM-120C Advanced Electronic Protection Improvement Program (AIM-120C Advanced EPIP): Complete MOT&E 2 -AIM 120D System Improvement Program 3 (AIM-120D SIP-3): Plan for MOT&E -AIM-9X Block II 9.4xx (AIM-9X Blk II 9.4xx): Plan for FOT&E -B61 Life Extension Program (B-61 LEP): Conduct IOT&E -Electronic Bomb Fuze FMU-139D/B (FMU-139D/B): Conduct OUE -Hypersonic Conventional Strike Weapon (HCSW): Plan for OUE -Inter-Continental Ballistic Missile Fuze (ICBM FUZE): Plan for OA -Mk21A Reentry Vehicle (Mk21A RV): Conduct early influence -Small Diameter Bomb II (SDB II): Complete MOT&E -Conduct other planning and operational testing for new weapons system programs as the requirement becomes known to AFOTEC  <b><i>FY 2020 Plans:</i></b> -AIM 120D System Improvement Program 3 (AIM-120D SIP-3): Conduct MOT&E -AIM-9X Block II 9.4xx (AIM-9X Blk II 9.4xx): Conduct FOT&E -Electronic Bomb Fuze FMU-139D/B (FMU-139D/B): Complete OUE -Hypersonic Conventional Strike Weapon (HCSW): Conduct OUE -Inter-Continental Ballistic Missile Fuze (ICBM FUZE): Conduct OA -Mk21A Reentry Vehicle (Mk21A RV): Plan for EOA -Small Diameter Bomb II (SDB II): Conduct MOT&E2 -Conduct other planning and operational testing for new weapons system programs as the requirement becomes known to AFOTEC  <b><i>FY 2019 to FY 2020 Increase/Decrease Statement:</i></b> Decrease due to less extensive requirements and thus less costly scheduled test work.				
<b><i>Title:</i></b> C4ISR Systems OT&E  <b><i>Description:</i></b> Plan, execute and report OT&E for C4ISR Systems  <b><i>FY 2019 Plans:</i></b> -Air Force Integrated Personnel and Pay System (AFIPPS): Plan for IOT&E -AN/TPS-81 (Three Dimensional Expeditionary Long Range Radar (3DELRR)): Conduct early influence -Air Operations Center Weapon System Modification Program (AOC WS Mod): Conduct OA -Distributed Common Ground System (DCGS): Conduct OUEs 19-1, 19-2, 19-3, 19-4		1.042	4.152	3.461

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<ul style="list-style-type: none"> <li>-Family of Advanced Beyond Line Of Sight Terminals (FAB T): Conduct early influence</li> <li>-Nuclear Planning and Execution System Recapitalization (NPES): Conduct Release Tests</li> <li>-Presidential and National Voice Conferencing (PNVC): Conduct early influence</li> <li>-RQ-4 Global Hawk Block 30/Airborne Signals Intelligence Payload (ASIP): Conduct FOT&amp;E</li> <li>-Wide Area Surveillance (WAS): Conduct IOT&amp;E and FOT&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 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>-Air Force Integrated Personnel and Pay System (AFIPPS): Conduct IOT&amp;E</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): Conduct OUE</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): 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): Complete FOT&amp;E</li> <li>-Wide Area Surveillance (WAS): Complete FOT&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 2019 to FY 2020 Increase/Decrease Statement:</b> Decrease due less extensive requirements and thus less costly scheduled test work.</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 2019 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 influence</li> <li>-Deliberate and Crisis Action Planning and Execution Segments Increment 2B (DCAPES Inc 2B): Conduct OUE 1</li> <li>-Integrated Aircrew Ensemble (IAE): Conduct IOT&amp;E</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 2020 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> </ul>		0.445	0.134	0.629

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
-Deliberate and Crisis Action Planning and Execution Segments Increment 2B (DCAPES Inc 2B): Conduct OUE 2 -Maintenance, Repair, and Overhaul Initiative (MROI): Conduct IOT&E -Conduct other planning and operational testing for new combat support programs as the requirement becomes known to AFOTEC  <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Increase due to more extensive requirements and thus more costly scheduled test work.				
<b>Title:</b> NDAA 1647 Cyber Testing  <b>Description:</b> Plan and execute Congressional, DoD and Air Force mandated cyber security testing on AFOTEC programs for NDAA 1647 effort.  <b>FY 2019 Plans:</b> Execute cyber testing as referenced in NDAA 1647 initiative.  <b>FY 2020 Plans:</b> None  <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> NDAA 1647 initiative ends in FY19.		0.000	4.963	0.000
<b>Accomplishments/Planned Programs Subtotals</b>		15.523	18.043	13.793
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A				
<b>Remarks</b>				
<b>E. Acquisition Strategy</b> N/A				
<b>F. Performance Metrics</b> 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.				