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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3620F: <i>Research, Development, Test & Evaluation, Space Force I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 1206759SF / <i>Major T&E Investment - Space</i>
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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	-	0.000	86.503	89.751	0.000	89.751	98.694	105.148	110.679	112.909	Continuing	Continuing
660191: <i>Initial Operational Test and Eval</i>	-	0.000	1.442	1.512	0.000	1.512	1.542	1.572	1.603	1.634	Continuing	Continuing
664597: <i>Air Force Test Investments</i>	-	0.000	85.061	88.239	0.000	88.239	97.152	103.576	109.076	111.275	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program provides funds for the United States Space Force (USSF) Test Enterprise. Funds support enterprise-level, threat-relevant, and fully-integrated developmental and operational Space Test & Evaluation (T&E) activities and capabilities; the development of a professional space T&E workforce; and the organization, acquisitions, and operations of the National Space Test and Training Complex (NSTTC).

Space T&E activities and capabilities include the USSF Integrated Test Force (ITF) structures, USSF Operational Test Agency (OTA) test execution campaigns, and the workforce and activities required to conduct T&E to adequately assess the performance and survivability of DoD space systems, tactics, and technologies in contested environments.

Workforce development refers to the organizations, training, and activities required to develop a professional space T&E workforce including the development and operation of the Space Test Course at the United States Air Force (USAF) Test Pilot School (TPS).

Space T&E infrastructure encompasses the organization, acquisitions, operations, and associated activities as part of the NSTTC to develop, integrate, operate, and sustain the minimum technical capabilities required to test and evaluate the performance and survivability of critical Department of Defense (DoD) space systems in contested environments. The NSTTC delivers realistic test and training environments to support capability development by incorporating a mix of live and virtual capabilities to conduct threat emulation, advanced training, tactics development, and integrated testing.

In FY 2022, Major T&E Investment - Space was a New Start.

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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	71.503	0.000	0.000	0.000
Current President's Budget	0.000	86.503	89.751	0.000	89.751
Total Adjustments	0.000	15.000	89.751	0.000	89.751
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	15.000			
• 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	89.751	0.000	89.751

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 664597: Air Force Test Investments

Congressional Add: Program increase - lab and test range upgrades for space

Congressional Add Subtotals for Project: 664597

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	-	15.000
Congressional Add Subtotals for Project: 664597	-	15.000
Congressional Add Totals for all Projects	-	15.000

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force										Date: April 2022		
Appropriation/Budget Activity 3620F / 6					R-1 Program Element (Number/Name) PE 1206759SF / Major T&E Investment - S pace				Project (Number/Name) 660191 / Initial Operational Test and Eval			
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
660191: <i>Initial Operational Test and Eval</i>	-	0.000	1.442	1.512	0.000	1.512	1.542	1.572	1.603	1.634	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Space Operational Test and Evaluation refers to Congressionally mandated Space 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 funds the USSF Operational Test Agency's participation in Integrated Test and Evaluation (IT&E). Additionally, it funds the 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 effort 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, full rate production, fielding, or declaration of IOC for USSF programs. USSF schedules and executes tests according to the forecasted test readiness of the MDAP program offices.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Space Systems Operational Test and Evaluation (OT&E)	0.000	1.442	1.512
Description: Plan, execute and report OT&E for Space Systems			
FY 2022 Plans:			
Advanced Extremely High Frequency Satellite Communications (Advanced EHF): 4 TES will lead tests of suitability, cybersecurity, and AEHF MOT&E liens starting in FY23			
Evolved Strategic SATCOM (ESS): Conduct early influence			
Military GPS User Equipment (GPS MGUE): Conduct OUE 2			
GPS Next Generation Control Segment (GPS OCX): Conduct IOT&E			
Long-Range Discrimination Radar (LRDR): Conduct IOT&E			
Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Plan OA and Conduct early influence			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Protected Tactical Enterprise Service (PTES): Complete MOT&E Protected Tactical SATCOM (PTS): Plan for EOA Space Based Infrared System (SBIRS): Conduct early influence Space C2 (formerly JMS): Complete IOT&E Weather System Follow-On Microwave (WSF-M): Conduct OA Launch and Test Range System (LTRS): Conduct early influence. Conduct other planning and operational testing for new space system programs as the requirement becomes known to USSF.</p> <p>FY 2023 Plans: Continue FY22 activities namely: Advanced Extremely High Frequency Satellite Communications (Advanced EHF): Conduct early influence Evolved Strategic SATCOM (ESS): Conduct early influence Military GPS User Equipment (GPS MGUE): Conduct OUE 2 GPS Next Generation Control Segment (GPS OCX): Plan for MOT&E Long-Range Discrimination Radar (LRDR): Conduct IOT&E Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Conduct OA Protected Tactical Enterprise Service (PTES): Complete MOT&E Protected Tactical SATCOM (PTS): Plan for EOA Space Based Infrared System (SBIRS): Conduct early influence Space C2 (formerly JMS): Complete IOT&E Weather System Follow-On Microwave (WSF-M): Conduct OA Conduct other planning and operational testing for new space system programs as the requirement becomes known to USSF.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase from 2022 to 2023 due to inflation factor.</p>				
Accomplishments/Planned Programs Subtotals		0.000	1.442	1.512
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
This project title will be renamed in a future cycle to reflect current scope and direction of the project.				
D. Acquisition Strategy				
N/A				

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Appropriation/Budget Activity 3620F / 6					R-1 Program Element (Number/Name) PE 1206759SF / Major T&E Investment - Space				Project (Number/Name) 664597 / Air Force Test Investments			
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
664597: Air Force Test Investments	-	0.000	85.061	88.239	0.000	88.239	97.152	103.576	109.076	111.275	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Space Force Test Investments refers to the space T&E activities, workforce development, and space T&E infrastructure required for the development, operation, and sustainment of the USSF Test Enterprise required to conduct T&E to adequately assess the performance and survivability of DoD space systems, tactics, and technologies in contested environments.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Space Force Test Investments	0.000	70.061	88.239
Description: Develop, operate, and sustain the USSF Test Enterprise.			
FY 2022 Plans: Establish the Space Test Course at the USAF TPS and graduate the first classes of space test professionals. Develop a foundational and scalable software baseline for an enduring on-orbit test capability that utilizes terrestrial and on-orbit sensors to provide near real-time and safety of flight, time, space, position information (TSPI) for Space T&E campaigns. Complete acquisition of a dedicated space Command and Control (C2) antennae to support Space T&E campaigns. Prototype a Model Based Systems Engineering (MBSE) baseline for future digital Space T&E campaigns informed by live, virtual, and constructive testing.			
FY 2023 Plans: Invest in previously identified technical capabilities to include survivability infrastructure, on-orbit range development, physics-based modeling, data infrastructure, facility upgrades and contractor support. Continue previous USSF Test Enterprise efforts under this PE including development and operation of the NSTTC. Develop digital NSTTC and Space T&E capabilities based on an MBSE baseline. Continue software development for NSTTC on-orbit capabilities and begin development and acquisition of terrestrial and on-orbit sensor capabilities. Begin to fund the Space Force Foreign Materiel Program in accordance with the prioritized Space Force Foreign Materiel List. Progress the technical baseline for the NSTTC's on-orbit, digital, electromagnetic spectrum, and cyber infrastructure and develop more robust test and training capabilities. Continue to develop and conduct the Space Test Course at the USAF TPS.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
The FY23 funds increase is for investments in foundational infrastructure for the core digital elements of the NSTTC as well as the standup of new developmental and operational T&E capabilities within Space Training and Readiness Command (STARCOM). The increase also includes an inflation adjustment			
Accomplishments/Planned Programs Subtotals	0.000	70.061	88.239

	FY 2021	FY 2022
Congressional Add: Program increase - lab and test range upgrades for space	-	15.000
FY 2022 Plans: The FY22 funding increase of \$15 million will accelerate development activities and acquisitions of the NSTTC's On-Orbit, Digital, and Cyber T&E infrastructure.		
Congressional Adds Subtotals	-	15.000

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 06 0604759F: <i>Major T&E Investment</i>	208.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	208.680
• RDTE 06 0605712F: <i>Initial Operational Test & Evaluation</i>	13.557	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.557

Remarks

D. Acquisition Strategy

N/A