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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force **Date:** March 2024

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 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	167.901	146.797	229.665	0.000	229.665	217.859	219.531	218.510	227.824	0.000	1,428.087
660191: <i>660191 - Space Systems Operational Test & Eval</i>	-	1.512	9.565	27.051	0.000	27.051	28.713	29.790	29.866	30.490	0.000	156.987
664597: <i>664597 - Professional Test Workforce</i>	-	166.389	115.405	5.912	0.000	5.912	6.275	6.511	6.527	6.663	0.000	313.682
664598: <i>664598 - National Space Test and Training Complex (NSTTC)</i>	-	0.000	21.827	196.702	0.000	196.702	182.871	183.230	182.117	190.671	0.000	957.418

Note
 BPAC 660191 Title renamed to Space Systems Operational Test & Eval
 BPAC 664597 Title renamed to Professional Test Workforce
 BPAC 664598 Title renamed to National Space Test and Training Complex (NSTTC)

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 Department of Defense (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 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.

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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.

B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	173.974	146.797	167.087	0.000	167.087
Current President's Budget	167.901	146.797	229.665	0.000	229.665
Total Adjustments	-6.073	0.000	62.578	0.000	62.578
• 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	0.331	0.000			
• SBIR/STTR Transfer	-6.404	0.000			
• Other Adjustments	0.000	0.000	62.578	0.000	62.578

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

Project: 664597: *664597 - Professional Test Workforce*

Congressional Add: *Lab and test range upgrades for space*

Congressional Add: *Operational test and training infrastructure - Cyber Test/Evaluation and Aggressor Force Capabilities*

Congressional Add: *Operational test and training infrastructure - Ground-based radar in support of NSTTC*

Congressional Add Subtotals for Project: 664597

Congressional Add Totals for all Projects

	FY 2023	FY 2024
	-	0.000
	48.367	-
	34.204	-
	82.571	0.000
	82.571	0.000

Change Summary Explanation

FY 2025 increase is due to funding needed for range command and control leading to the first step in realizing the Global Range Operations concept; new architecture to include ground-based optical sensors and network terminals required to enable classified mission planning and data sharing with specific customers of the Orbital Space Range; Cyber range and Aggressor investments necessary for equipping the Aggressors, defending the global range, replication of mission systems and range sustainment and the test expertise needed to support an additional 18 test programs.

FY25: +28.880M funds threat informed, operationally representative training environments and HWIL (Hardware-in-the-loop) lab to conduct cyber T&E and cyber test training.

FY25: +25.480M funds the NSTTC capability growth for Electronic Warfare (EW) and Orbital Warfare (OW) ranges.

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Appropriation/Budget Activity 3620F: <i>Research, Development, Test & Evaluation, Space Force</i> / BA 6: <i>RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 1206759SF / <i>Major T&E Investment - Space</i>	
FY25: +7.800M funds Orbital Warfare (OW) Integrated Test Force. FY25: +.418M inflation increase.		

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force										Date: March 2024		
Appropriation/Budget Activity 3620F / 6					R-1 Program Element (Number/Name) PE 1206759SF / Major T&E Investment - Space				Project (Number/Name) 660191 / 660191 - Space Systems Operational Test & Eval			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
660191: 660191 - Space Systems Operational Test & Eval	-	1.512	9.565	27.051	0.000	27.051	28.713	29.790	29.866	30.490	0.000	156.987
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 2023	FY 2024	FY 2025
Title: Space Systems Operational Test and Evaluation (OT&E)	1.512	9.565	27.051
Description: Plan, execute and report OT&E for Space Systems			
FY 2024 Plans:			
Continue FY23 activities namely:			
- Advanced Extremely High Frequency Satellite Communications (Advanced EHF): Conduct FOT&E			
- Evolved Strategic SATCOM (ESS): Conduct early influence			
- Military GPS User Equipment (GPS MGUE): Conduct IOT&E			
- GPS Next Generation Control Segment (GPS OCX): Conduct MOT&E			
- Long-Range Discrimination Radar (LRDR): Conduct FOT&E			
- Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Conduct OUE			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3620F / 6	R-1 Program Element (Number/Name) PE 1206759SF / Major T&E Investment - S pace	Project (Number/Name) 660191 / 660191 - Space Systems Operational Test & Eval

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<ul style="list-style-type: none"> - Protected Tactical Enterprise Service (PTES): Complete MOT&E - Protected Tactical SATCOM (PTS): Conduct OUE - Space Based Infrared System (SBIRS): Conduct OUE - SBIRS Survivable Endurable Evolution (S2E2): Conduct IOT&E - Space C2 (formerly JMS): Complete FOT&E - Tranche 1 Transport Layer (and accompanying Tranche 1 Tracking Layer): Conduct IOT&E - Conduct other planning and operational testing for new space system programs as the requirement becomes known to USSF. <p>FY 2025 Plans: Continue FY24 activities namely:</p> <ul style="list-style-type: none"> - Advanced Tracking Launch Analysis System: Conduct IOT&E - AN/FPS-132 UEWR Beam Steering Unit: Conduct IOT&E - Enhanced Polar System - Recapitalization: Conduct IOT&E - Evolved Strategic SATCOM (ESS): Conduct early influence - Family of Beyond Line-of-Site Terminals (FAB-T): Conduct IOT&E, threat testing; followed by FOT&E - Force Element Terminal: Conduct early influence - Future Operational Resilient Ground Evolution - Conduct MTA - Geosynchronous Space Surveillance Awareness Program 7/8: Conduct FOT&E - GPS IIIIF - Conduct early influence - Iris: Conduct IOT&E - Military GPS User Equipment (GPS MGUE): Conduct IOT&E - Mobile AEHF Terminal: Conduct early influence - Missile Defense System - Conduct MOT&E - GPS Next Generation Control Segment (GPS OCX): Conduct MOT&E - Proliferated Warfighter Satellite Architecture: Conduct IOT&E - Long-Range Discrimination Radar (LRDR): Conduct FOT&E - Next-Generation Overhead Persistent Infrared (Next-Gen OPIR): Conduct OUE - Presidential and National Voice Conferencing: Conduct MOT&E - Protected Tactical SATCOM - Conduct MTA - Space Based Infrared System (SBIRS): Conduct OUE - SBIRS Survivable Endurable Evolution (S2E2): Conduct FDE - SureFire: Conduct IOT&E - Weather Satellite Follow-on Microwave - Conduct early influence 			

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Appropriation/Budget Activity 3620F / 6	R-1 Program Element (Number/Name) PE 1206759SF / Major T&E Investment - S pace	Project (Number/Name) 660191 / 660191 - Space Systems Operational Test & Eval		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
- Conduct other planning and operational testing for new space system programs as the requirement becomes known to USSF.				
FY 2024 to FY 2025 Increase/Decrease Statement: Increase is due to funding realignment from project 664597 by 17.486M. Realignment aligns funding with prior execution year internal spend plans. This realignment did not result in any discontinuation of effort and is not a New Start. Funding levels deliver increased expertise and infrastructure required to support the evaluation of new programs on the OSD Oversight list.				
Accomplishments/Planned Programs Subtotals		1.512	9.565	27.051
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force **Date:** March 2024

Appropriation/Budget Activity 3620F / 6	R-1 Program Element (Number/Name) PE 1206759SF / Major T&E Investment - Space	Project (Number/Name) 664597 / 664597 - Professional Test Workforce
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
664597: 664597 - Professional Test Workforce	-	166.389	115.405	5.912	0.000	5.912	6.275	6.511	6.527	6.663	0.000	313.682
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

This project has been re-characterized as a standalone test workforce project for funding traceability purposes. Project Title was renamed from Space Force Test Investments to Professional Test Workforce.

A. Mission Description and Budget Item Justification

This project provides funding for the organizations, training, and activities required to develop a professional space T&E workforce, in conjunction with the USSF Chief Human Capital Officer. Funding primarily supports the development of the Space Test Course as the USAF Test Pilot School. The STC at USAF TPS will provide graduate-level education for the core space T&E workforce.

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

	FY 2023	FY 2024	FY 2025
Title: Professional Test Workforce	83.818	115.405	5.912
Description: Manage the professional test workforce in conjunction with the USSF Chief Human Capital Officer, including the T&E training opportunities necessary to develop our professional test workforce.			
FY 2024 Plans: - Continue to develop and conduct the STC at the USAF TPS. Prepare transition of STC to a 1-year curriculum.			
FY 2025 Plans: - In conjunction with USAF Test Pilot School, continue to develop a year-long, degree granting, professional space test course to produce guardians with the necessary expertise in robust survivability testing, procedure validation, full-envelope characterization, and system performance validation.			
FY 2024 to FY 2025 Increase/Decrease Statement: FY 2024 decreased compared to FY 2025 by 109.493M due to realignment to project 664598. Realignment aligns with prior execution year internal spend plans. This realignment did not result in any discontinuation of effort and is not a New Start.			
Accomplishments/Planned Programs Subtotals	83.818	115.405	5.912

	FY 2023	FY 2024
Congressional Add: Lab and test range upgrades for space	-	0.000

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	FY 2023	FY 2024
FY 2024 Plans: Increased investment in digital architecture and expertise needed to replicate adversary threat systems and provide high-fidelity test and training environments.		
Congressional Add: Operational test and training infrastructure - Cyber Test/Evaluation and Aggressor Force Capabilities	48.367	-
FY 2023 Accomplishments: Funds will be used to build cyber range and lab capability for T&E of space systems, defensive cyber tools, cyber aggressors, and cyber test training in secure environments. The cyber range(s) will be built as operationally representative environments to conduct T&E and training and can include blue and red models		
Congressional Add: Operational test and training infrastructure - Ground-based radar in support of NSTTC	34.204	-
FY 2023 Accomplishments: Funds will be leveraged to upgrade the existing backend of the Ground Based Radar-Kwajalein as well as invest in long lead parts to replace the Radome so that the Ground Based Radar-Kwajalein can become an effective NSTTC Range Asset.		
Congressional Adds Subtotals	82.571	0.000

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

N/A

Remarks

Formerly titled Space Force Test Investments

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 - S pace				Project (Number/Name) 664598 / 664598 - National Space Test and Training Complex (NSTTC)			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
664598: 664598 - National Space Test and Training Complex (NSTTC)	-	0.000	21.827	196.702	0.000	196.702	182.871	183.230	182.117	190.671	0.000	957.418
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This project has been re-characterized as a standalone NSTTC project for funding traceability purposes and consolidation of all NSTTC investments. Project Title was renamed from NSTTC-E to NSTTC.

A. Mission Description and Budget Item Justification

Provide space warfighters interconnected, scalable, and distributed physical and digital ranges for full-spectrum test and training to develop, validate, and sharpen joint warfighting solutions to prevail in conflict.

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

	FY 2023	FY 2024	FY 2025
Title: NSTTC	0.000	21.827	196.702
<p>Description: Supports the development of National Space Test and Training Complex test environments that are critical for developmental and operational test, training, exercises and tactics development for space systems. Includes development, demonstration and delivery of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated space systems. Provides a safe, secure, controllable and repeatable environment for the testing of space systems and training operators in both realistic and relevant electromagnetic environments.</p> <p>NSTTC-C (Cyber Range)-Provides live and simulated cyber operations and security test and training. NSTTC-C will be a center of excellence for verification, validation, and accreditation (VV&A) USSF systems for cyber resiliency, security, and interoperability.</p> <p>NSTTC-D (Digital)-Provides hybrid digital environments, infrastructure based digital connectivity, and cradle-to-grave Modeling & Simulation (M&S) to enable system concept studies, development, test, training, exercises, and wargaming.</p> <p>NSTTC-E (Electromagnetic Range)-Provides ground infrastructure and on-orbit subjects for Electronic Warfare (EW), Satellite Communications (SATCOM), and Positioning Navigation and Timing (PNT) test and training.</p> <p>NSTTC-O (Orbital Range)-Provides sensor and data fusion to enable live, on-orbit Orbital Warfare (OW) test and training. On-orbit infrastructure supports execution of exquisite, discrete demonstrations.</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p><i>FY 2024 Plans:</i></p> <ul style="list-style-type: none"> - Invest in architecture to integrate unit and theater-level Space Electromagnetic Spectrum and orbital support for training, exercise, and mission rehearsal across the operational domains - Invest in dedicated cyber training, equipment, expertise and systems needed to defend the NSTTC, replicate mission systems, and equip Cyber Aggressors - Continue development of test and evaluation electronic spectrum environment command and control. - Continue support to warfighting community of electronic warfare advanced training environment. - Develop integrated data transport architecture with NSTTC. <p><i>FY 2025 Plans:</i></p> <ul style="list-style-type: none"> - Continue investments in NSTTC On-Orbit, Digital, Cyber, and Electromagnetic pillars including development of foundational infrastructure as well as modernization and improvement (I&M) of existing capabilities to keep current with military priorities, evolving threats, and advanced training involving USSF and joint systems and operations - Continue development of Electromagnetic Spectrum range C3, terminal, data generation systems - Continue support to warfighting community of electronic warfare advanced training environment - Continue development of integrated data transport architecture with NSTTC <p><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></p> <p>Increase from FY 2024 to FY 2025 supports funding for cyber range and aggressors for operational threat environments, the National Space Test and Training Complex (NSTTC) capability growth for Electronic Warfare (EW) and Orbital Warfare (OW) ranges, and to fund OW integrated test force. Increase also due to realignment from a project 664597 by 109.493M in order to consolidate all NSTTC funding into one standalone project for traceability purposes. Realignment aligns with prior execution year internal spend plans. This realignment did not result in any discontinuation of effort and is not a New Start.</p>			
Accomplishments/Planned Programs Subtotals	0.000	21.827	196.702

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

N/A

Remarks

D. Acquisition Strategy

N/A