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

Appropriation/Budget Activity 3620F: <i>Research, Development, Test & Evaluation, Space Force / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1203174SF / <i>Space Innovation, Integration and Rapid Technology Development</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	-	17.432	45.203	41.483	0.000	41.483	48.815	40.262	41.090	42.573	Continuing	Continuing
674671: <i>Enterprise Training Services Development</i>	-	0.000	0.000	31.670	0.000	31.670	38.798	30.007	30.619	31.725	Continuing	Continuing
67A011: <i>Space Analysis and Application Development</i>	-	17.432	45.203	9.813	0.000	9.813	10.017	10.255	10.471	10.848	Continuing	Continuing

Note

In FY 2024, the Enterprise Training Services Development funding and activities transferred from Project 67A011, Space Analysis and Application Development to Project 674671, Enterprise Training Services Development in order to segregate Training Services under the Space Force.

A. Mission Description and Budget Item Justification

The Space Innovation, Integration, and Rapid Technology Development (SIIRTD) delivers enterprise capabilities and solutions to maintain space domain superiority in an evolving environment. Enterprise Training Services Development delivers enterprise space training capabilities via a system-of-systems architecture. This architecture includes collaborative systems / platforms, networks, modeling and simulation tools, and training services necessary for a full spectrum of interoperable, on-demand, multi-mission training capabilities to meet USSF and mission partner requirements. Development activities include planning, designing, building, and fielding new and enhanced systems / tools into the overall architecture to ensure USSF enterprise readiness to fight in any scenario.

The SIIRTD program also develops and modifies modeling and simulation tools that USSF/Space Operations Command's Space Warfighting Analysis Center (SWAC) uses for operations research, military utility analyses, tradeoff studies, and other evaluations of space mission areas to guide planning, programming, requirements generation, analyses of alternatives, and other activities. Development activities incorporate changes in fielded and projected space operational capabilities, as well as technical improvements, into the group's software tools to ensure their data and technology remain current. SIIRTD projects continuously evaluate ways to increase innovation and resiliency to counter known and emerging threats through: technology risk reduction efforts; integrating new capabilities and / or repurpose existing capabilities; implementing enterprise decision-making tools/experimentation/rapid prototyping; and fielding enterprise solutions via all appropriate acquisition authorities and contract mechanisms. Its innovation, education, and training activities foster solutions to operational deficiencies and enhance the integration of space systems, enabling USSF and joint warfighters to realize the full potential of existing and planned space capabilities.

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.

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	18.054	38.103	49.222	0.000	49.222
Current President's Budget	17.432	45.203	41.483	0.000	41.483
Total Adjustments	-0.622	7.100	-7.739	0.000	-7.739
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	7.200			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.622	0.000			
• Other Adjustments	0.000	-0.100	-7.739	0.000	-7.739

Change Summary Explanation

FY 2022: -\$0.622M SBIR adjustment.

FY2023: +\$7.2M Congressional Add for operational test and training infrastructure - fully fund standard space training for current and emerging missions. - \$0.100M FFRDC reduction.

FY 2024: -\$0.259M to realign funding to APPN 3410, PE 1207804SF (SAG 13C), for fiscal policy compliance as Space Systems Command (SSC) establishes Headquarters functions and a Chief Information Office (CIO) for integrated cybersecurity. The FY 2024 funding request was reduced by \$7.701M to account for the availability of prior year execution balances.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3620F / 7					R-1 Program Element (Number/Name) PE 1203174SF / <i>Space Innovation, Integration and Rapid Technology Development</i>				Project (Number/Name) 674671 / <i>Enterprise Training Services Development</i>			
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
674671: <i>Enterprise Training Services Development</i>	-	0.000	0.000	31.670	0.000	31.670	38.798	30.007	30.619	31.725	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY 2024, the Enterprise Training Services Development funding and activities transferred from Project 67A011, Space Analysis and Application Development to Project 673671, Enterprise Training Services Development in order to segregate Training Services under the Space Force. Enterprise Training Services Development (ETSD) delivers essential warfighting readiness and Guardian space education capabilities across Deltas 1 (Training), 2 (Space Domain Awareness), 3 (Space Electronic Warfare), 4 (Missile Warning), 5 (Command and Control), 8 (Satellite Communications & Navigational Warfare), 9 (Orbital Warfare), and 13 (Education); Missile Defense Agency (MDA); US Strategic Command (STRATCOM); National Space Defense Center (NSDC); US Air Force Academy (USAFA); and National Security Space Institute (NSSI). Capabilities meet USSF Operation Test & Training Infrastructure (OTTI) requirements and include: Unit-level Training (UT) for mission operator qualification; Advanced Training (AT) for threat-driven tactics development; interoperable exercise services, including connectivity to Distributed Mission Operations - Space (DMO-S) training networks and Modeling and Simulation (M&S) tools integration; and Guardian space education. ETSD provides interoperable, evolvable, scalable, resilient, 24/7 on-demand, cost-effective platforms and environments to ensure warfighter readiness to operate in a Contested, Degraded, and Operationally limited (CDO) domain.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Enterprise Training Services Development	-	-	31.670	0.000	31.670
Description: Enterprise Training Services Development (ETSD) delivers essential warfighting readiness and Guardian space education capabilities to operational Deltas and USSF mission partners. ETSD will continue to deliver realistic, high-fidelity space training platforms and architectures to enable UT and AT capabilities; threat-driven simulations for AT and wargaming; and virtual environments and tools for interoperable, multi-mission training, exercises, and wargaming in realistic, contested conditions.					
FY 2024 Base Plans: Continue to develop and deliver UT/AT systems and capabilities for Space Domain Awareness (Delta 4, Upgraded Early Warning Radar); Electronic Warfare (Delta 2, Space Fence and Eglin Radar); and Orbital Warfare (Delta 9, 1st Space Operations Squadron); required to assure operational readiness and integrate these missions for interoperable, virtual warfighting exercises. Continue transition from DMO-S to Virtual Space Training and Exercise Environment (VSTEE). Continue efforts to develop and integrate UT/AT systems and capabilities and M&S tools into VSTEE; required for enterprise-wide, interoperable, threat-based training,					

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>exercises, and tactics development to 'train like you fight' in a CDO space domain. Modernize UT/AT system hardware; required for the Virtual Space Training Exercise Environment (VSTEE) integration and capability availability. Continue implementing training system resiliency and situational awareness; required to assure training and exercise continuity in a CDO environment. Efforts may include, but are not limited to, program office support, studies, technical analyses, experimentation, prototyping, etc.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase driven by planned VSTEE maturation and integration tasks, which include transition from DMO-S, M&S tool development and integration, and mission UT/AT capabilities integration.</p>					
Accomplishments/Planned Programs Subtotals	-	-	31.670	0.000	31.670

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

N/A

Remarks

D. Acquisition Strategy

All contracts in this program element will be awarded using competitive procedures to the maximum extent possible, to upgrade existing capabilities as well as to acquire next generation capabilities through incremental development.

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

SIIRD	
Enterprise Space Training Development	

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SIIRTD				
Enterprise Space Training Development	1	2024	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3620F / 7					R-1 Program Element (Number/Name) PE 1203174SF / <i>Space Innovation, Integration and Rapid Technology Development</i>				Project (Number/Name) 67A011 / <i>Space Analysis and Application Development</i>			
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
67A011: <i>Space Analysis and Application Development</i>	-	17.432	45.203	9.813	0.000	9.813	10.017	10.255	10.471	10.848	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Located at Peterson SFB, Colorado, the Space Innovation, Integration and Rapid Technology Development (SIIRTD) program develops and modifies modeling and simulation tools that USSF/Space Operations Command's Space Analysis Center uses for operations research, military utility analyses, tradeoff studies, and other evaluations of space mission areas to guide planning, programming, requirements generation, analyses of alternatives, and other activities. Development activities incorporate changes in fielded and projected space operational capabilities, as well as technical improvements, into the group's software tools to ensure their data and technology remain current. The Space Training Simulators team develops and upgrades space training emulators such as the Standard Space Trainer (SST) to meet Space Mission Force (SMF) threat-based, advanced training requirements. Finally, its innovation, education, and training activities foster solutions to operational deficiencies and enhance the integration of space systems into Space Force operations, thereby enabling service and joint warfighters to realize the full potential of existing and planned space capabilities.

Programs and projects in the space warfighting enterprise are evaluating ways to increase innovation and resiliency to known and emerging threats. Space enterprise efforts aim to execute technology risk reduction efforts, integrate new capabilities or repurpose existing capabilities, implement enterprise decision-making tools/ experimentation/rapid prototyping and fielding via all appropriate acquisition authorities and contract mechanisms.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Model/Tool Development and Capability Upgrades	5.615	9.581	9.813	-	9.813
Description: Develops, verifies, and validates models for space mission areas and modifies existing models to portray new capabilities that meet senior leader intent. Advancing Modeling & Simulation (M&S) tools to provide space linkages and impacts to the warfighter as constellations are degraded in a contested environment and incorporate space effects at the campaign, mission and engagement levels with the goal of enhancing decision support, visualization, exercise and wargaming. Rapidly meet downward-directed guidance implementing the system resiliency and situational awareness necessary to win in a contested space domain. Activities may include, but are not limited to, acquisition, program office support, studies, technical analysis, prototyping, etc. The space M&S is used for military utility analyses, trade studies, and other space program evaluations supporting OSD, Joint Staff, Headquarters Air Force, Headquarters United States Space Force, and the USSF Field Commands.					

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Appropriation/Budget Activity 3620F / 7	R-1 Program Element (Number/Name) PE 1203174SF / <i>Space Innovation, Integration and Rapid Technology Development</i>	Project (Number/Name) 67A011 / <i>Space Analysis and Application Development</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><i>FY 2023 Plans:</i> Continue supporting the SpOC field command to develop assessment strategies to assist with deliberate and contingency planning analyzing force structure for the USSF. Also, the funds will support space capability development and space systems delivery as well as strengthen the commander's "fight tonight" strategy with quick-turn senior leader ops assessment. Provides senior leaders with strategic and operational level analysis - converting data into decision quality information. Specifically, funds support for:</p> <ul style="list-style-type: none"> • Support Commander (CC) management (mgt) Headquarters (HQ) and Space Forces Forward (SFFOR) (Operation Order (OPORD direction)) missions; force status to COMSPACEFOR and CDR USSPACECOM • Identifies Space Force "fight tonight" risk in multi-domain warfight using specific scenarios and campaign plans • Developing SpOC and delta metrics as inputs to ops assessments • Campaign modeling initiative response to VCSO "go do"; ensure DoD accurately representing space <p><i>FY 2024 Base Plans:</i> Continue supporting the SpOC field command to develop assessment strategies to assist with deliberate and contingency planning analyzing force structure for the USSF. Also, the funds will support space capability development and space systems delivery as well as strengthen the commander's "fight tonight" strategy with quick-turn senior leader ops assessment. Provides senior leaders with strategic and operational level analysis - converting data into decision quality information. Specifically, funds will support:</p> <ul style="list-style-type: none"> • Support Commander (CC) management (mgt) Headquarters (HQ) and Space Forces Forward (SFFOR) (Operation Order (OPORD direction)) missions; force status to COMSPACEFOR and CDR USSPACECOM • Identifies Space Force "fight tonight" risk in multi-domain warfight using specific scenarios and campaign plans • Developing SpOC and delta metrics as inputs to ops assessments • Campaign modeling initiative response to VCSO "go do"; ensure DoD accurately representing space • Explore and develop AI/ML applications to meet space mission requirements (e.g. Conjunction assessment, satellite maneuver pattern of life) • Develop space analysis tools to improve enterprise accuracy/ efficiency • Reinforce SDA community decisions with comprehensive studies and analysis • Present digital operations to CSO <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase due to inflation adjustment.</p>					
<i>Title:</i> Standard Space Trainer Development	11.817	35.622	0.000	-	0.000

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Description: In FY2024, "Standard Space Trainer Development (SST)" effort title will be changed to "Enterprise Training Services Development" to accurately capture the larger overall mission and activity set. This is not a new start.</p> <p>Develop, evolve, and enhance space training capabilities to meet USSF Operation Test & Training Infrastructure (OTTI) requirements, including: Unit-level Training (UT); threat-based Advanced Training (AT); and interoperable exercise services, including connectivity to Distributed Mission Operations - Space (DMO-S) training networks and Modeling and Simulation (M&S) tools integration. Plan and execute efforts in accordance with USAF Operational Training Infrastructure (OTI) Flight Plan and STRATCOM Integrated Priority List (IPL) priorities.</p> <p>FY 2023 Plans: Accelerate completion of SST development for Bounty Hunter SST, PARCS SST development, and SBIRS AT capabilities. Continue development of SST functionality for Space C2, IROC SSTs at Eglin AFB, Space Domain Awareness (SDA) and Orbital Warfare (OW) missions as well as SST Architecture modernization. Begin development of AT capabilities across the USSF portfolio as well as MILSATCOM SSTs to support new Delta 8 units. Continue ongoing enterprise M&S development for Blue/White/Red consoles and begin transition from the DMO-S to the Virtual Space Range (VSR).</p> <p>Continue developing SST into an advanced/warfighter training capability. Incorporating SSTs into VSR M&S toolset and developing additional products to support USSF and Mission Partner AT events across distributed networks including Red Console (Threat M&S), Event Visualization, and Exercise Control. VSR projects will also include upgrades to integrate M&S tools into a cloud-based training environment. Without these improvements, interoperability with Joint/Coalition partners and AT capabilities (i.e. Threat M&S) within a virtual training environment will not be possible, limiting the SST's training capability to basic (peacetime) weapon system operation and prohibit mission readiness objectives to "Train as You Fight" in a Contested, Degraded, and Operationally-limited (CDO) space domain.</p> <p>Implement system resiliency and situational awareness necessary to operate in a CDO environment. Activities may include, but are not limited to, program office support, studies, technical analyses, experimentation, prototyping, etc.</p> <p>FY 2024 Base Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> FY 2024 decreased due to transfer of Standard Space Trainer to PE 1203174SF, Space Innovation, Integration and Rapid Technology Development, Program 674671, Enterprise Training Services Development.					
Accomplishments/Planned Programs Subtotals	17.432	45.203	9.813	-	9.813

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• SPAF 01 GNRLIT: <i>General Information Tech - Space</i>	-	-	-	-	-	-	-	-	-		
• SPSF 01 GNRLIT: <i>General Information Tech - Space</i>	1.378	0.427	0.434	-	0.434	0.441	0.450	0.462	0.471	Continuing	Continuing

Remarks
Funding and content procures equipment for the SIIRTD USSF Virtual Analysis Capability system. Supports space and cyber modeling & analysis using a variety of Linux and Windows based hardware and software suites. Also procures Information Technology (IT) hardware and software infrastructure for the Distributed Communications Architecture for HQ ACC.

D. Acquisition Strategy
Any new project funded in this program will be awarded using competitive procedures to the maximum extent possible.

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

SIIRTD	
Model Development/Modification, verification & validation	
Standard Space Trainer Development	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 7	R-1 Program Element (Number/Name) PE 1203174SF / <i>Space Innovation, Integration and Rapid Technology Development</i>	Project (Number/Name) 67A011 / <i>Space Analysis and Application Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SIIRTD				
Model Development/Modification, verification & validation	1	2022	4	2028
Standard Space Trainer Development	1	2022	4	2023