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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 I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 1206730SF / <i>Space Security and Defense Program</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	-	53.896	69.169	59.784	0.000	59.784	51.360	52.575	53.651	55.583	Continuing	Continuing
64A025: <i>Space Protection Program</i>	-	53.896	69.169	59.784	0.000	59.784	51.360	52.575	53.651	55.583	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element (PE) 1206730SF, Space Security and Defense Program (SSDP) funds activities executed by the Joint Department of Defense (DoD)/ United States Space Force (USSF) and Office of the Director of National Intelligence (ODNI) organization Space Security and Defense Program. The Program and organization were established to function as the center of excellence for options and strategies (materiel, non-materiel, cross-Title, cross-domain) leading to a more resilient National Security Space (NSS) Enterprise. The organization and its activities operate under the authority of the Deputy Secretary of Defense (DEPSECDEF) and Principal Deputy Director of National Intelligence (PDDNI). SSDP's unique position with both the DoD and ODNI, authorities from both the DEPSECDEF and PDDNI, and broad NSS-scoped mission-set provides a crucial and objective protection competency to advance the highest priority efforts to deliver economical, programmatically-executable, and operationally-relevant space protection solutions for the Nation.

SSDP-funded activities support NSS stakeholders including the DoD, Intelligence Community (IC), civil, commercial, and international space entities/missions supporting current and future national security operations in both peacetime and throughout all phases of conflict. In this capacity, SSDP employs these funds to lead and collaborate on NSS susceptibility and vulnerability assessments, and threat mitigation processes. Its breadth of activities span the capability to conduct rigorous foundational analyses in order to understand red counterspace threat and blue operations environments, and to plan and execute projects to discover, analyze, and validate near-term and far-term options to detect, track, and mitigate and/or render these threats (including emerging space and transmedium threats) ineffective. SSDP analytic products to mitigate/defeat adversary counterspace threats either manifest themselves in validated materiel solution recommendations to corporate decision processes (including system and/or architectural requirements and potential investment opportunities), or as non-materiel recommendations such as Tactics, Techniques, and Procedures (TTP), Concepts of Operations (CONOPS), and/or space policy, or a combination of both. Regardless, SSDP threat analyses and models of all sorts are shared across the NSS enterprise to ensure efficiency and speed of analysis, and ultimately produce results in more resilient space effects for national security missions.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage and execute SSDP and/or deliver products for emergent or unanticipated weapon system capabilities.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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	53.896	59.169	60.151	0.000	60.151
Current President's Budget	53.896	69.169	59.784	0.000	59.784
Total Adjustments	0.000	10.000	-0.367	0.000	-0.367
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	10.000			
• 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	-0.367	0.000	-0.367

Change Summary Explanation

FY23 Congressional add (\$10M) for the program to address the increasing number and complexity of emerging space and transmedium threats (Anti-Satellite Weapons, hypersonics, space-delivered effects, reentering debris, high altitude balloons, high-speed high-altitude objects, and other anomalous objects). FY23 language from all three relevant Senate Committees (SASC, SSCI, SAC-D) requested SSDP address this broader range of threats as part of the program's enduring scope.

FY 2024: -\$0.367M; reduction for higher USSF priorities.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: Space Protection and Survivability	53.896	69.169	59.784
Description: SSDP applies a holistic analytical approach to improve the resilience of NSS space effects for national security missions.			
FY 2023 Plans:			
In FY 2023 SSDP resources completed and/or or transitioned FY 2022 activities, and initiated emerging or backlogged priorities to answer key questions aligned with three enduring objective areas: Defend the Legacy Architecture, Pivot to Offense, and Prepare for the Future Fight. Foundational work matured and drove threat assessments with NSS stakeholders, and informed concepts, doctrine, policy, space control force designs and space control fire control solutions. The Program continued to emphasize Digital Engineering through its Model-Based Systems Engineering (MBSE) products applied to red and blue system design and mission analyses and simulations, and in support of wargaming. SSDP remained committed to identify and answer the most crucial questions afflicting the NSS stakeholders it represents and serves, with ever-maturing technical rigor as the counterspace and space protection landscape continued to unfold and evolve.			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Foundational space protection and threat definition analyses and products continued to promulgate MBSE standards to maximize the utility of SSDP analyses across the NSS enterprise. The program prioritized modeling and simulation to inform priority space protection capabilities, warfighting concepts, doctrine, policy, and the NSS capability area designs they are designed to protect and defend.</p> <p>Program efforts to inform NSS investments that defend legacy capabilities, inform survivability for next-generation satellites, and establish initial offensive force designs that informed budget and requirements continued to progress in FY 2023. For instance, SSDP executed several space control activities resulting in recommendations and design-specific system/technology solutions and concepts which the organization shared with key NSS stakeholders. NSS stakeholders also benefited from SSDP progress to inform Electronic Warfare (EW) force designs and to scope supporting Command and Control interests which the organization will prioritize for additional analyses. Similarly, NSS stakeholders were able to dramatically improve space mission resilience due to SSDP's enterprise-level fire control assessments and resulting recommendations. Moreover, SSDP's discovery work to dissect and refine red and blue kill chains, detect/track/mitigate emerging space and transmedium threats, produce relevant design reference missions, and analyze multi-domain space and terrestrial scenarios subsequently revealed additional protection priorities the program will investigate for NSS, along with opportunities for future prototyping and/or demonstration endeavors. FY 2023 leveraged the successes and discoveries of FY 2022 efforts, and moved SSDP toward the next priority analyses; enabling more flexibility for the U.S. to mitigate adversary counterspace capabilities without increased risk of escalation.</p> <p>SSDP's prior years' activities and accomplishments not only advanced the landscape of space protection, but also emphasized understanding and preparing for the future fight. In FY 2023 the program continued to delve into new technology solutions to increase resiliency for NSS space platforms and effects. The future fight requires options that enable the US to more flexibly hold adversary capabilities at risk without increased risk of escalation.</p> <p>FY 2024 Plans: In FY 2024 SSDP activities will remain focused on identifying and answering NSS stakeholder priorities across three still-relevant objective areas; Survivability and Defense, Offensive Space Control, and Preparing for the Future Fight. As with prior years, the program's holistic approach to these analyses and resulting recommendations will demand threat knowledge, Space Domain Awareness and Fire Control, costing, policy, and wargaming analyses to the appropriate extent and practicality.</p> <p>NSS stakeholders will continue to benefit from SSDP-benchmarked digital engineering products (including MBSE) for both space protection analyses and threat definition documentation. Recognizing the demand for SSDP analyses, the program will continue to invest in knowledge management infrastructure to make analyses more readily available and will continue to invest in developing and sustaining analytic capabilities to support its NSS Enterprise stakeholders.</p>			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>In addition to ongoing and new Space Control, EW, and Future Technology investment recommendations, FY 2024 will deliver initial digital engineering capabilities to the USSF including a Model Library with available blue systems and red threat models with complementary designs for the Analysis Environment and Government-Owned MBSE-compliant Simulation Engines. These deliverables are intended to be used for not only USSF Force Design and Wargaming activities, but also the test, training, and doctrine communities.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> FY 2024 funding decreased due to FY23 Congressional add (\$10M) of funding to establish an enduring capability to address emerging space and transmedium threats, as well as to develop new analysis products, experiments, and prototypes to inform budget, requirements, TTPs, and new intelligence collection capabilities to avoid strategic surprise and enhance current and future programs to counter these national security threats.</p>				
Accomplishments/Planned Programs Subtotals		53.896	69.169	59.784
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
N/A				
E. Acquisition Strategy				
All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. The program consists of numerous efforts/projects.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3620F / 4				PE 1206730SF / Space Security and Defense Program				64A025 / Space Protection Program							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Space Protection and Survivability	Various	Various : TBD	-	47.665	May 2022	62.524	Jan 2023	52.822	Oct 2023	-		52.822	Continuing	Continuing	-
Subtotal			-	47.665		62.524		52.822		-		52.822	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support and Infrastructure	Various	Various : TBD	-	2.138	Mar 2022	2.326	Nov 2022	2.493	Oct 2023	-		2.493	Continuing	Continuing	-
Oversight, Advisory and other Technical Support	Various	Various : TBD	-	4.093	Mar 2022	4.319	Nov 2022	4.469	Oct 2023	-		4.469	Continuing	Continuing	-
Subtotal			-	6.231		6.645		6.962		-		6.962	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	53.896		69.169		59.784		-		59.784	Continuing	Continuing	N/A
Remarks															
N/A															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	R-1 Program Element (Number/Name) PE 1206730SF / <i>Space Security and Defense Program</i>	Project (Number/Name) 64A025 / <i>Space Protection Program</i>

	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
<i>Space Security and Defense Program</i>																												
Adversary Space, Counterspace, and Enabling Analyses																												
Space Policy & Strategy Analyses																												
Space Domain Awareness Fire Control for Space Control																												
Wargaming Support & Model-Based Systems Engineering																												
Space Defense & Survivability																												
Offensive Space Control Analysis																												
Electronic Warfare Capability Area Designs & Discovery																												
Integrated Targeting Event																												
Future Concepts																												
Future Technologies																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	R-1 Program Element (Number/Name) PE 1206730SF / <i>Space Security and Defense Program</i>	Project (Number/Name) 64A025 / <i>Space Protection Program</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Space Security and Defense Program</i>				
Adversary Space, Counterspace, and Enabling Analyses	1	2022	4	2028
Space Policy & Strategy Analyses	1	2022	4	2028
Space Domain Awareness Fire Control for Space Control	1	2022	4	2028
Wargaming Support & Model-Based Systems Engineering	1	2022	4	2024
Space Defense & Survivability	1	2022	4	2028
Offensive Space Control Analysis	1	2022	4	2028
Electronic Warfare Capability Area Designs & Discovery	1	2022	4	2028
Integrated Targeting Event	1	2022	4	2028
Future Concepts	1	2022	4	2028
Future Technologies	1	2022	4	2028