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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 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 1206425SF / <i>Space Situation Awareness Systems</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	-	213.884	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	213.884
640290: <i>Deep Space Advanced Radar Concept</i>	-	213.884	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	213.884
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Space Domain Awareness (SDA) is one of five core competencies of the Space Force and is the effective identification, characterization, and understanding of any factor, passive or active, associated with the space domain that could affect space operations and thereby impact the security, safety, economy, or environment of our nation. As the foundation for space control, SDA encompasses surveillance of all space objects and activities; detailed surveillance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; gathering indications and warning on adversary space operations; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities.

This program element develops new network sensors and improved information integration capabilities across the space surveillance network (SSN) while companion program element 1203940SF fields, upgrades, operationalizes, operates, and maintains Space Force sensors and information integration capabilities within the SSN. Activities funded in this program element (1206425SF) also support efforts such as engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, modernization initiatives, systems engineering, system development, and test & evaluation, and may include prototyping and technology demonstration.

Deep Space Advanced Radar Capability (DARC) is a ground-based, SDA radar system to detect, track, and maintain custody of deep space objects 24/7, through the solar exclusion gap. DARC will augment the SSN as an additional sensor with increased capacity and capability for deep space object custody, providing full global coverage.

In FY 2024, Deep Space Advanced Radar Concept efforts were transferred to Budget Authority 5 PE 1206425SF, Space Situation Awareness Systems, Project 656565, Ground Based SDA, in order to align it with other developmental SDA programs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver DARC weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392SF and 1206398SF.

The total cost of the DARC Rapid Prototype Middle Tier of Acquisition (MTA) effort is 859.1 million. DARC Site 1 is not fully funded across the Future Years Defense Program. The Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trades based on technical maturity, or transition to alternative pathways.

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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.

B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	221.421	0.000	0.000	0.000	0.000
Current President's Budget	213.884	0.000	0.000	0.000	0.000
Total Adjustments	-7.537	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	-7.537	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
Title: DARC Site 1 Operational Capability	213.884	0.000	0.000
Description: The DARC MTA activity will develop, test, and deliver one DARC site with a current estimated completion date of CY 2025. It will also provide a foundation for up to two more future sites located strategically around the world to provide global deep space radar capability to support SDA. The system will be responsive to regularly scheduled and un-scheduled tasks to locate, identify, characterize deep space objects and report the results to Battle Management Command and Control locations and SSN.			
FY 2024 Plans: In FY 2024, Deep Space Advanced Radar Concept efforts were transferred to Budget Authority 5 PE 1206425SF, Space Situation Awareness Systems, Project 656565, Ground Based SDA, in order to align it with other developmental SDA programs.			
FY 2025 Plans: In FY 2024, Deep Space Advanced Radar Concept efforts were transferred to Budget Authority 5 PE 1206425SF, Space Situation Awareness Systems, Project 656565, Ground Based SDA, in order to align it with other developmental SDA programs.			
FY 2024 to FY 2025 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	213.884	0.000	0.000

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Appropriation/Budget Activity
3620F: Research, Development, Test & Evaluation, Space Force I BA 4:
Advanced Component Development & Prototypes (ACD&P)

R-1 Program Element (Number/Name)
PE 1206425SF / Space Situation Awareness Systems

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

N/A

Remarks

E. Acquisition Strategy

Project utilizes existing DoD engineering and study contracts and activities to conduct science and technology development and data analysis activities. Preliminary/ critical design effort for the technology maturation and prototype commenced in FY 2017. A Broad Agency Announcement (BAA) was used to award seven Integrated System Engineering Team (ISET) contracts which allow for organizations to participate, advise the government, and gain insight into the prototype design and build. In May of 2019, DARC was designated as an MTA under Section 804 of the 2016 National Defense Authorization Act (NDAA). In 2020, DARC was directed to pursue a Rapid Prototyping Middle Tier Acquisition program for Site 1. The DARC Site effort will be executed through two separate contract elements: The Prime System Integrator (PSI) was awarded to Northrop Grunman Inc. via a single, competitive award through the Space Enterprise Consortium (SpEC) Other Transaction Authority (OTA) agreement and third-party software development through multiple SpEC OTA agreements. The Space Force intends to develop and field two additional DARC sites in the future to culminate in a final operational system of three global sites to ensure SDA coverage. A follow-on acquisition pathway strategy based on the success of the Site 1 rapid prototype and an MTA transition plan are being developed for Sites 2 and 3 in accordance with DoDI 5000.80.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3620F / 4				PE 1206425SF / Space Situation Awareness Systems				640290 / Deep Space Advanced Radar Concept								
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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	
DARC Technical Mission Analysis	RO	Various : Various	-	9.104	Jan 2023	-		-		-		-	0.000	9.104	-	
DARC System Development	C/CPIF	Northrop Grumman : Colorado Springs, CO	-	193.406	Jan 2023	-		-		-		-	0.000	193.406	-	
Subtotal			-	202.510		-		-		-		-	0.000	202.510	N/A	
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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	
DARC Prototype System and Sustainment Analyses	Various	Various : Various	-	1.046	May 2023	-		-		-		-	0.000	1.046	-	
Subtotal			-	1.046		-		-		-		-	0.000	1.046	N/A	
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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	
A&AS	Various	Various : Various	-	7.881	Nov 2022	-		-		-		-	0.000	7.881	-	
FFRDC	RO	MITRE Corp. : Colorado Springs, CO	-	2.249	Nov 2022	-		-		-		-	0.000	2.249	-	
Other Support	Various	Various : Colorado Springs, CO	-	0.198	Nov 2022	-		-		-		-	0.000	0.198	-	
Subtotal			-	10.328		-		-		-		-	0.000	10.328	N/A	
Project Cost Totals			-	213.884		-		-		-		-	0.000	213.884	N/A	

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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>Prototype Risk Reduction Build and Test</i>																												
Site 1 Environmental Assessment	■																											
Software Development	■	■	■	■																								
Site 1 MTA Development	■	■	■	■																								
Site 1 Construction				■	■	■	■																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3620F / 4	R-1 Program Element (Number/Name) PE 1206425SF / <i>Space Situation Awareness Systems</i>	Project (Number/Name) 640290 / <i>Deep Space Advanced Radar Concept</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Prototype Risk Reduction Build and Test</i>				
Site 1 Environmental Assessment	1	2023	1	2023
Software Development	1	2023	4	2023
Site 1 MTA Development	1	2023	4	2023
Site 1 Construction	3	2023	4	2023