Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force											Date: March 2024	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0604005F / *NC3 Commercial Development & Prototyping*							
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	-	93.485	78.799	68.124	0.000	68.124	67.306	61.114	0.000	0.000	Continuing	Continuing
640860: *Nuclear Command Control and Communications (NC3)*	-	93.485	78.799	68.124	0.000	68.124	67.306	61.114	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funding for NC3 PE under PE 0604858F (Tech Transition), prototyping Project (645351), transitioned to PE 0604005F, Project 640860, beginning in FY23 per Congressional direction.

A. Mission Description and Budget Item Justification

The DAF nuclear enterprise has historically used unique closed systems to provide the high degree of mission assurance and security needed for this mission. Furthermore the rapid development of the nuclear enterprise required the fielding of the most advanced technology of that time, and in most cases utilized technology that was well ahead of the commercial sector. Today the technological world is very different and in cases such as satellite communications and information technology (IT) systems the commercial sector has raced ahead of government unique systems.

Commercial Leveraging for the nuclear enterprise will explore a range of key technologies that are either commercial, or commercial entwined with government system to quantitatively determine whether these capabilities provide increased resilience, improved reconstitution, or lower cost for applications within the DOD nuclear enterprise. It is not intended to replace baseline systems, but rather will be prototypes to augment existing capabilities.

The program will reduce risk in leveraging emerging commercial-based technologies by partnering with industry while providing access to Government analysis, testing and certification capabilities. Prime investments focus on Government-Industry partnerships to influence and militarize emerging commercial capabilities to ensure US competitive advantage in key technology areas. Experimentation efforts will be employed to explore new concepts and their applications in future operating environments within a system-of-systems context taking risks early in the acquisition process to drive a more optimized and efficient acquisition approach significantly reducing overall acquisitions costs. Prototyping of commercially-derived technologies into government systems, followed by operational experimentation of the performance and security, will enable these candidate technologies to move into warfighting capability faster and at a lower cost, based on demonstrated low-risk prototypes.

Efforts include a focus on communications, secure data flow, and incorporating commercial approaches for a coarse navigation capability. Communications will focus primarily on satellite links by prototyping terminals that can gain access and switch across multiple commercial and government links from a common terminal. Multiple commercial vendors will be competitively awarded contracts for these prototypes and will work with the government partners to interface with selected platforms across the enterprise. Secure data flow will test various techniques across commercial and DOD partners to smartly utilize multiple communications paths to increase resilience, and also to integrate with hybrid architectures under USSF and across terrestrial networks. Coarse navigation will explore, test and prototype commercially-

derived approaches to resiliently provide a very coarse navigation capability to disadvantaged users. This capability does not replace GPS or other advanced precision DOD Position-Navigation-Timing capabilities or approach their exquisite capabilities, but will instead provide a back-up option for a coarse capability for a scenario when no other options are available to the DOD user.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F, 0605831F, and/or 0606017F

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	97.000	78.799	68.004	0.000	68.004
Current President's Budget	93.485	78.799	68.124	0.000	68.124
Total Adjustments	-3.515	0.000	0.120	0.000	0.120
• 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	0.000	0.000			
• Other Adjustments	-3.515	0.000	0.120	0.000	0.120

Change Summary Explanation

The FY23 PB Congress directed the stand-up of this new PE. Previous efforts programmed in PE 0604858F.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Commercial Leveraging for the Nuclear Enterprise	93.485	78.799	68.124
Description: Utilizing commercial terminal providers to develop key prototypes, and associated test and experimentation. Includes analysis to assess the hybrid architecture and integration options to the USSF/SDA space transport layer and DOD/ commercial terrestrial networks. Includes prototype of coarse navigation capability. Establish partnerships with DOD partners for secure data transport across multiple links. Initiate efforts with the USAF program offices for the key platforms to facilitate integration assessments.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force	Date: March 2024
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604005F / *NC3 Commercial Development & Prototyping*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2023 Accomplishments: Awarded three prime contracts for communication terminal prototypes and successfully completed preliminary design reviews. Initiated platform integration discussions and analyses with four key platforms in preparation for detailed integration work that will begin in FY2024. ***FY 2024 Plans:*** Receive initial terminal prototypes late in FY24 and initiate testing. Fund multiple contracts for platform integration assessments with each platform. Start field testing of coarse navigation techniques and approaches for secure data transport across multiple links. ***FY 2025 Plans:*** Fund multiple contracts to perform platform integration assessments with each platform. Start platform integration activities on selected terminals and begin operational experimentation on successfully integrated platforms. Acquisition strategy updates have been completed and contracts issued in FY 2023 for successful execution in FY 2024 and FY 2025. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding decreased compared to FY 2024 funding by $10.812 million due to high up-front hardware costs for prototype terminals. In FY 2025 the effort switches more towards integration platform assessment experimentation, operational experimentation, and testing which are lower cost due to the nature of the work.			
Accomplishments/Planned Programs Subtotals	93.485	78.799	68.124

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

For FY24-FY25, the NC3 contractual efforts are within the scope of the DEUCSI solicitation which has an ASP approved by AFRL/CC. The ceiling and scope of the ASP are sufficient for execution of the planned funds.

The FFRDC analysis will be executed under existing contractual arrangements. Those vehicles have sufficient scope and ceiling to support the NC3 effort.

Integration assessment will be executed by the existing contractor aligned with each platform. Each platform PEO already has those contracts in place, and the NC3 funds will be transferred as needed by MIPR.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604005F / *NC3 Commercial Development & Prototyping*	Project (Number/Name) 640860 / *Nuclear Command Control and Communications (NC3)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Terminals Vendor 1	C/CPFF	L3Harris : Salt Lake City, UT	-	25.000	Jul 2023	21.266		14.329		-		14.329	Continuing	Continuing	-
Prototype Terminals Vendor 2	C/CPFF	Northrop Grumman : San Diego, CA	-	25.000	Jun 2023	21.266		14.466		-		14.466	Continuing	Continuing	-
Prototype Terminals Vendor 3	C/FFP	SES-SD : Reston, VA	-	28.703	Aug 2023	21.267		14.329		-		14.329	Continuing	Continuing	-
Prototype Terminals Vendor 4	C/CPFF	Lockheed Martin : Fort Worth, TX	-	1.106	Sep 2023	-		-		-		-	Continuing	Continuing	-
Prototype Terminals Vendor 5	C/CPFF	Rand : Santa Monica, CA	-	0.621	May 2023	-		-		-		-	Continuing	Continuing	-
Prototype Terminals Vendor 6	C/CPFF	Intelsat : McLean, VA	-	8.843	Jan 2024	-		-		-		-	Continuing	Continuing	-
Coarse Navigation approach 1	C/FFP	TBD : TBD	-	0.000	Jun 2023	10.000		-		-		-	Continuing	Continuing	-
Platform Integration assessments	C/Various	TBD : TBD	-	0.000	Jul 2023	3.000		3.000		-		3.000	Continuing	Continuing	-
Platform Integration	C/CPAF	TBD : TBD	-	-		-		20.000		-		20.000	Continuing	Continuing	-
		Subtotal	-	89.273		76.799		66.124		-		66.124	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Architecture analysis	C/Various	Various : TBD	-	3.091		1.000		1.000		-		1.000	Continuing	Continuing	-
Architecture Analysis (1)	C/CPAF	JHU/APL : TBD	-	0.758	Jul 2023	1.000		1.000		-		1.000	Continuing	Continuing	-
		Subtotal	-	3.849		2.000		2.000		-		2.000	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604005F / *NC3 Commercial Development & Prototyping*	**Project (Number/Name)** 640860 / *Nuclear Command Control and Communications (NC3)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration Costs	Various	Various : TBD	-	0.050	Feb 2023	-		-		-		-	Continuing	Continuing	-
Contractor Support	Various	Various : TBD	-	0.313	Jul 2023	-		-		-		-	Continuing	Continuing	-
		Subtotal	-	0.363		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	93.485		78.799		68.124		-		68.124	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604005F / *NC3 Commercial Development & Prototyping*	**Project (Number/Name)** 640860 / *Nuclear Command Control and Communications (NC3)*

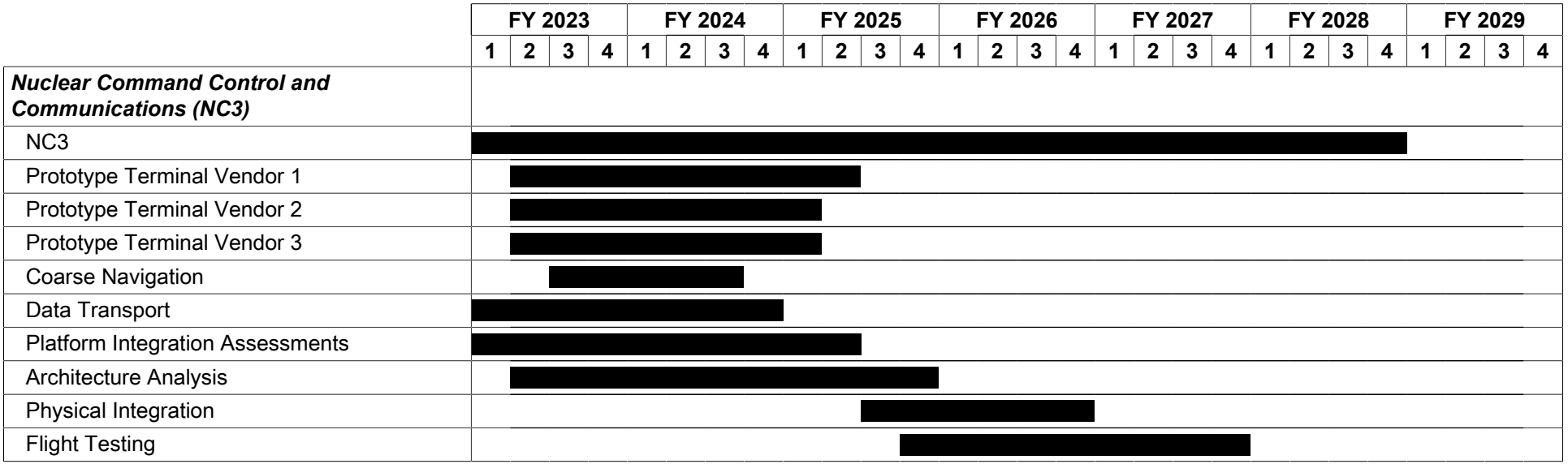

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604005F / *NC3 Commercial Development & Prototyping*	**Project (Number/Name)** 640860 / *Nuclear Command Control and Communications (NC3)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Nuclear Command Control and Communications (NC3)				
NC3	1	2023	4	2028
Prototype Terminal Vendor 1	2	2023	2	2025
Prototype Terminal Vendor 2	2	2023	1	2025
Prototype Terminal Vendor 3	2	2023	1	2025
Coarse Navigation	3	2023	3	2024
Data Transport	1	2023	4	2024
Platform Integration Assessments	1	2023	2	2025
Architecture Analysis	2	2023	4	2025
Physical Integration	3	2025	4	2026
Flight Testing	4	2025	4	2027