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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0301112F / <i>Nuclear Planning and Execution System (NPES)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	0.000	42.719	32.699	0.000	0.000	0.000	-	-	-	-	-	-
673768: <i>Nuclear Planning and Execution System (NPES)</i>	0.000	33.539	29.595	0.000	0.000	0.000	-	-	-	-	-	-
674212: <i>NLCC Decision Support System</i>	0.000	9.180	3.104	0.000	0.000	0.000	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

United States Strategic Command (USSTRATCOM) conducts global operations in partnership with other combatant commands, services and U.S. government agencies to deter and detect strategic attacks against the United States. USSTRATCOM is responsible for command of U.S. nuclear capabilities, space operations, global surveillance and reconnaissance, intelligence, communications, computers, global missile defense and combatting weapons of mass destruction. To enable completion of these missions, it is recapitalizing the Nuclear Planning and Execution System (NPES). NPES is a Chairman, Joint Chiefs of Staff system for nuclear operations and fulfillment of Nuclear Command and Control (NC2) responsibilities. NPES supports national strategic deterrence by providing a host of NC2 execution activities as well as contingency and crisis action planning capabilities to selected joint and combatant command staffs. NPES is operated by USSTRATCOM and other specified users performing missions to deter and dissuade threats, and, when directed, defeat adversaries.

The NPES system has evolved from several single-purpose command and control systems over the past 30 years and has reached a point where it requires recapitalization to meet national and strategic objectives and to comply with future concepts of operation. Additionally, recapitalization is needed to improve cybersecurity, system effectiveness, and supportability. Recapitalization will also seek to lower the total cost of ownership and sustainment. The recapitalization program will use proven/mature software engineering, technologies, and design tenets to provide a modern, secure, interoperable and reliable Nuclear Command and Control (NC2) software capability. NPES will exploit AFLCMC/HBC agile software development economies of scale to enable developers to build and integrate software at the Top Secret level vice paying to build duplicate capabilities at other government or contractor facilities.

Funds agile software development activities and a secure software development environment, located in existing space at Offutt AFB. Software development environment will meet classification/security regulations/criteria, which will promote competition.

This is a Section 804 Alpha Phase rapid software prototyping effort. This effort includes decomposing system, functional and non-functional requirements in order to design, build, and field a new NPES application software baseline via agile, development operations (DevOps), and user-centered design principles. Further, the effort includes developing written artifacts to document system / software engineering elements appropriate for an Agile/DevOps software development effort.

No FY 2022 funding requested; FY 2022 project efforts are detailed in PE 0608158F BA-08, Strategic Mission Planning and Execution System (SMPES).

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0301112F / <i>Nuclear Planning and Execution System (NPES)</i>
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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 0605831F. In FY20 0.000M was expended for civilian pay expenses in this program element, and in FY21 0.000M is forecasted for civilian pay expenses in this program element.

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.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	44.190	32.759	12.940	0.000	12.940
Current President's Budget	42.719	32.699	0.000	0.000	0.000
Total Adjustments	-1.471	-0.060	-12.940	0.000	-12.940
• 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	-1.471	-0.060	-12.940	0.000	-12.940

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force										Date: May 2021		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0301112F / <i>Nuclear Planning and Execution System (NPES)</i>				Project (Number/Name) 673768 / <i>Nuclear Planning and Execution System (NPES)</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
673768: <i>Nuclear Planning and Execution System (NPES)</i>	0.000	33.539	29.595	0.000	0.000	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

United States Strategic Command (USSTRATCOM) conducts global operations in partnership with other combatant commands, services and U.S. government agencies to deter and detect strategic attacks against the United States. USSTRATCOM is responsible for command of U.S. nuclear capabilities, space operations, global surveillance and reconnaissance, intelligence, communications, computers, global missile defense and combatting weapons of mass destruction. To enable completion of these missions, it is recapitalizing the Nuclear Planning and Execution System (NPES). NPES is a Chairman, Joint Chiefs of Staff system for nuclear operations and fulfillment of Nuclear Command and Control (NC2) responsibilities. NPES supports national strategic deterrence by providing a host of NC2 execution activities as well as contingency and crisis action planning capabilities to selected joint and combatant command staffs. NPES is operated by USSTRATCOM and other specified users performing missions to deter and dissuade threats, and, when directed, defeat adversaries.

The NPES system has evolved from several single-purpose command and control systems over the past 30 years and has reached a point where it requires recapitalization to meet national and strategic objectives and to comply with future concepts of operation. Additionally, recapitalization is needed to improve cybersecurity, system effectiveness, and supportability. Recapitalization will also seek to lower the total cost of ownership and sustainment. The recapitalization program will use proven/mature software engineering, technologies, and design tenets to provide a modern, secure, interoperable and reliable Nuclear Command and Control (NC2) software capability. NPES will exploit AFLCMC/HBC agile software development economies of scale to enable developers to build and integrate software at the Top Secret level vice paying to build duplicate capabilities at other government or contractor facilities.

Funds agile software development activities and a secure software development environment, located in existing space at Offutt AFB. Software development environment will meet classification/security regulations/criteria, which will promote competition.

This is a Section 804 Alpha Phase rapid software prototyping effort. This effort includes decomposing system, functional and non-functional requirements in order to design, build, and field a new NPES application software baseline via agile, development operations (DevOps), and user-centered design principles. Further, the effort includes developing written artifacts to document system / software engineering elements appropriate for an Agile/DevOps software development effort.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver NPES weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605833F, 0605832F, and 0605898F.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0301112F / <i>Nuclear Planning and Execution System (NPES)</i>	Project (Number/Name) 673768 / <i>Nuclear Planning and Execution System (NPES)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>Title: Nuclear Planning and Execution System (NPES) Modernization</p> <p>Description: - The NPES program will use proven and mature software engineering, technologies, and design tenets to provide a modern, secure, interoperable and reliable Nuclear Command and Control (NC2) capability for USSTRATCOM and other users as appropriate.</p> <ul style="list-style-type: none"> - It will update and/or replace existing system software and improve reliability and sustainability. - It will also seek to reduce total ownership cost. <p>FY 2021 Plans:</p> <ul style="list-style-type: none"> -FY21 the NPES Recap developer will produce sufficient new software capability to enable the user representatives to conduct operational testing & evaluation. -FY21 will be the third year of SW development with plans to reduce the NPES Recap SW developer teams. -FY21 NPES Recap will fund AFLCMC/HBC in-house software development resources to promote competition, a secure developmental environment, and enable developers to build and integrate software at the Top Secret level as part of the agile software development effort. <p>FY 2022 Base Plans:</p> <ul style="list-style-type: none"> -FY22 the NPES Recap developer will produce sufficient new software capability to enable the user representatives to conduct operational testing & evaluation. -FY22 will be the fourth year of SW development with plans to reduce the NPES Recap SW developer teams. -FY22 NPES Recap will fund AFLCMC/HBC in house software development resources to promote competition, a secure developmental environment, and enable developers to build and integrate software at the Top Secret level as part of the agile software development effort. <p>FY 2022 OCO Plans:</p> <p>No OCO requested.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p> <p>\$2.180M increase from FY21PB is due to a technical adjustment of program OPAF to RDT&E to meet development requirements.</p>	33.539	29.595	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	33.539	29.595	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0301112F / <i>Nuclear Planning and Execution System (NPES)</i>	Project (Number/Name) 673768 / <i>Nuclear Planning and Execution System (NPES)</i>

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

Line Item	FY 2020	FY 2021	FY 2022	FY 2022	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	Cost To	
			Base	OCO	Total					Complete	Total Cost
• OPAF 03 Line Item 833140: <i>Strategic Command and Control</i>	2.266	2.358	2.401	-	2.401	-	-	-	-	-	-

Remarks

In FY18, PE 0303255F, Service Support to STRATCOM-C4, Project 833140, partial funding was transferred to PE 0301112F, Nuclear Planning and Execution (NPES), for better transparency.

D. Acquisition Strategy

NPES will develop, test, and field a renewed Nuclear Command and Control (NC2) capability for combatant commanders using an evolutionary acquisition approach with development contracts that are negotiated and awarded in a competitive environment. Additionally, select government agencies will be used to conduct relevant analyses and provide other required support. NPES will exploit AFLCMC/HBC agile software development economies of scale to enable developers to build and integrate software at the Top Secret level vice paying to build duplicate capabilities at other government or contractor facilities.

This is a Section 804 Alpha Phase rapid software prototyping effort. This effort includes decomposing system, functional and non-functional requirements in order to design, build, and field a new NPES application software baseline via agile, development operations (DevOps), and user-centered design principles. Further, the effort includes developing written artifacts to document system / software engineering elements appropriate for an Agile/DevOps software development effort.

Funds agile software development activities and a secure software development environment. Software development environment will meet classification/security regulations/criteria, which will promote competition.

The Air Force Life Cycle Management Center at Hanscom AFB, (AFLCMC/HB) and the 55th CONS at Offutt AFB will be the contracting authorities for NPES and provide necessary program management, contracts, legal, and financial management support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0301112F / Nuclear Planning and Execution System (NPES)				673768 / Nuclear Planning and Execution System (NPES)							
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
Primary Development	Various	NG : Offutt AFB, NE	0.000	27.859	Nov 2019	25.655	Nov 2020	-		-		-	-	-	-
Development Suites & Infrastructure	C/TBD	NG : Offutt AFB, NE	0.000	1.251		-		-		-		-	-	-	-
Subtotal			0.000	29.110		25.655		-		-		-	-	-	N/A
Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
DevOps Support	Various	Various : Offutt AFB, NE	0.000	2.064	Feb 2020	1.791	Feb 2021	-		-		-	-	-	-
Technical Engineering Services	Various	Various : Offutt AFB, NE	0.000	1.862	Nov 2019	1.701	Nov 2020	-		-		-	-	-	-
Subtotal			0.000	3.926		3.492		-		-		-	-	-	N/A
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
T&E	Various	Various : Offutt AFB, NE	0.000	0.503	Feb 2020	0.448	Feb 2021	-		-		-	-	-	-
Subtotal			0.000	0.503		0.448		-		-		-	-	-	N/A
Project Cost Totals			0.000	33.539		29.595		-		-		-	-	-	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0301112F / <i>Nuclear Planning and Execution System (NPES)</i>	Project (Number/Name) 673768 / <i>Nuclear Planning and Execution System (NPES)</i>

FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
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

NPES	
Alpha Phase - Rapid Prototyping	
Beta Phase Rapid Fielding	
Delta Phase - Continuous Product Improvement	

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NPES				
Alpha Phase - Rapid Prototyping	1	2020	2	2021
Beta Phase Rapid Fielding	2	2021	4	2022
Delta Phase - Continuous Product Improvement	4	2022	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force										Date: May 2021		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0301112F / Nuclear Planning and Execution System (NPES)				Project (Number/Name) 674212 / NLCC Decision Support System			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
674212: NLCC Decision Support System	0.000	9.180	3.104	0.000	0.000	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Decision Support Service (DSS) directly supports the senior leader decision making calculus. Numerous studies, reviews, and practical experience identified the need to create a decision making aid. These identified needs culminated in an Initial Capabilities Document (ICD) that have been validated by the Joint Requirements Oversight Council (JROC). DSS will improve situational awareness, aggregate strategic-level information, provide a common visual display, be resilient, and mobile. Several attempts to provide a DSS-like capability have been attempted over the years. These ad hoc attempts failed due to the lack of community buy-in and a structured acquisition methodology. Today, DSS has complete community buy-in and folding it under AFLCMC ensure rigorous acquisition processes will be followed. The program will use the accelerated acquisition process known as Section 804. USSTRATCOM is the logical home for DSS. Additionally, DSS accomplishes agile software development activities and a secure software development environment, located in existing space at Offutt AFB. Software development environment will meet classification/security regulations/criteria, which will promote competition. DSS is supported by WHMO, OSD, NLCC, and CJCS. The Service provider is the United States Air Force and the Functional Manager is Air Force Global Strike Command (AFGSC).

No FY 2022 funding requested; FY 2022 project efforts are detailed in PE 0608158F BA-08, Strategic Mission Planning and Execution System (SMPES).

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: DSS Development	9.180	3.104	0.000	0.000	0.000
Description: Product Development					
FY 2021 Plans:					
- Validate and integrate information from Strategic Study					
- Deploy three Minimal Viable Products (MVP) for user assessment					
- Provide periodic developmental updates IAW Agile development principles					
- Continue back-end development and data integration					
- Build and integrate required IT Infrastructure					
- Refine and Implement cybersecurity requirements IAW cybersecurity plan					
- Finalize and approve Rapid Fielding Requirements Document					
FY 2022 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<ul style="list-style-type: none"> - Complete development of prototype - Begin rapid fielding - Continue development updates IAW Agile developmental principles - Continue Back-end development and data integration - Continue integration with required IT infrastructure - Refine and Implement cybersecurity requirements IAW cybersecurity plan <p><i>FY 2022 OCO Plans:</i> No OCO requested.</p> <p><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Air Force planned adjustments to program funding portfolio as program gets closer to delivery. Natural ramp down of RDT&E required in acquisition life-cycle.</p>					
Accomplishments/Planned Programs Subtotals	9.180	3.104	0.000	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

DSS will develop, test, and field a decision support system capability for use from the combatant commander and above. DSS will use agile development to rapidly prototype, develop software, and field the solutions. DSS will use existing government contract vehicles when advantageous or create development contracts that are negotiated and awarded in a competitive environment. Funds agile software development activities and a secure software development environment, located in existing space at Offutt AFB. Software development environment will meet classification/security regulations/criteria, which will promote competition. This program will be using the Section 804 acquisitions process to accelerate delivery of a finished product. Section 804 outlines authority granted to DoD in the FY2016 National Defense Acquisitions Act to rapidly prototype/field capabilities distinct from the traditional DoD 5000 acquisition system.

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
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	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
DSS Development																												
DSS Strategic Study																												
Senior Leader Visualization (SLV) Prototype Evaluation																												
Prototype Development																												
Disconnected Intermittent Low-Bandwidth (DIL) prototype evaluation																												
DSS IT Infrastructure and Cybersecurity																												
Data Integration																												
Minimal Viable Product Delivery 1																												
Minimal Viable Product Delivery 2																												
Minimal Viable Product Delivery 3																												
Prototype Continuous Software Delivery																												
Limited Operational Capability (LOC)																												
Rapid Fielding																												
Rapid Fielding Continuous Software Delivery																												
IOC																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>DSS Development</i>				
DSS Strategic Study	3	2020	1	2021
Senior Leader Visualization (SLV) Prototype Evaluation	3	2020	3	2020
Prototype Development	4	2020	1	2022
Disconnected Intermittent Low-Bandwidth (DIL) prototype evaluation	3	2020	1	2021
DSS IT Infrastructure and Cybersecurity	2	2020	4	2022
Data Integration	4	2020	4	2022
Minimal Viable Product Delivery 1	1	2021	1	2021
Minimal Viable Product Delivery 2	3	2021	3	2021
Minimal Viable Product Delivery 3	4	2021	4	2021
Prototype Continuous Software Delivery	4	2020	1	2022
Limited Operational Capability (LOC)	1	2022	1	2022
Rapid Fielding	2	2022	4	2024
Rapid Fielding Continuous Software Delivery	2	2022	4	2024
IOC	4	2024	4	2024