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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force **Date:** April 2022

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 0101316F / <i>Worldwide Joint Strategic Communications</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	30.124	15.202	22.725	0.000	22.725	2.597	2.646	2.702	2.762	Continuing	Continuing
671820: <i>Strategic Automated Command and Control System</i>	-	30.124	15.202	22.725	0.000	22.725	2.597	2.646	2.702	2.762	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Worldwide Joint Strategic Communication efforts include Nuclear Command, Control, and Communications (NC3) systems to include the Defense Injection Reception Emergency Action Message (EAM) C2 Terminals (DIRECT), Aircrew Alerting Communications Electromagnetic Pulse (AACE), the Strategic Emergency Action Transmission System (SEATS), the Defense Red Switch Network (DRSN), and the Strategic Automated Command and Control System (SACCS). Funding may be used to modernize these, and other, NC3 systems. Funding may also be used for research, testing, validation, certification, configuration management, and assessment of the Air Force NC3 Weapon System.

SACCS is a dedicated, high speed, multi-level secure, data transmission, processing, and display system. SACCS provides the primary non-survivable command and control capability for receiving and disseminating secure Emergency Action Messages (EAM), Force Direction Messages (FDM), Force Status Reporting (FSR), and exchanging information type messages from USSTRATCOM. SACCS provides messages for effective deployment of strategic bombers, reconnaissance aircraft, mobilization aircraft, tanker support aircraft, and the Intercontinental Ballistic Missile (ICBM) force to include Minuteman III (MM III) and Ground Based Strategic Deterrent (GBSD).

SACCS has equipment that has reached its end of life and is no longer repairable due to diminished manufacturing sources and parts obsolescence. This jeopardizes Air Force Global Strike Command's (AFGSC) ability to meet mission requirements as required by Chairman Joint Chiefs of Staff Nuclear Technical Performance Criteria and Operational Standards (CJCSI 6811.01). In order to mitigate the risk of SACCS inability to operate once the current spares are completely diminished and ensure the system remains secure against modern/future threats, the Air Force is developing a replacement system (SACCS-R). SACCS-R is currently pursuing Technology Maturation and Risk Reduction (TMRR) efforts to transition from Time-Division Multiplexing (TDM) to Internet Protocol (IP) architecture, monitor and secure the new IP-based network, and provide requisite support to Ground Based Strategic Deterrent (GBSD) fielding plans.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605831F and 0605833F. In FY2021 \$0.378M was expended for civilian pay expenses in this program element, in FY22 \$0.600M 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.

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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	31.166	15.202	0.000	0.000	0.000
Current President's Budget	30.124	15.202	22.725	0.000	22.725
Total Adjustments	-1.042	0.000	22.725	0.000	22.725
• 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	-1.042	0.000			
• Other Adjustments	0.000	0.000	22.725	0.000	22.725

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 671820: *Strategic Automated Command and Control System*

Congressional Add: *NC3 Architecture*

Congressional Add Subtotals for Project: 671820

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	8.000	-
	8.000	-
	8.000	-

Change Summary Explanation

The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

FY21: -\$1.042 SBIR reduction

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

	FY 2021	FY 2022	FY 2023
Title: SACCS Replacement	22.124	15.202	22.725
Description: Design and develop replacement Strategic Automated Command Control System (SACCS-R). Transition architecture from Time Division Multiplexing to Internet Protocol (TDM-IP). Replace legacy components with supportable networking and information system hardware. The new system mitigates cybersecurity risks; improves Mean Time Between Failure rates; improves reliability and availability; improves user interface; decreases annual sustainment costs; addresses Diminishing Manufacturing Sources and Material Shortages and obsolescence challenges; support a bridge connection to GBSD			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<p>through GBSD NC3 Terrestrial Integration (GNTI); and supports meeting the Chairman Joint Chiefs of Staff Nuclear Technical Performance Criteria and Operational Standards (CJCSI 6811.01).</p> <p><i>FY 2022 Plans:</i></p> <p>Build 1.1</p> <ul style="list-style-type: none"> -Complete Technology Maturation & Risk Reduction (TMRR) efforts to facilitate Build 1.1 to include a temporary modification to address near term obsolescence issues -Perform transition of TDM circuits to IP circuits through System Program Office (SPO)/Defense Information Systems Agency (DISA) process -Perform site modifications in support of Build 1.1 -Continue to facilitate solution to address the multi-level security requirement (Cross Domain Solution - CDS) -Continue design of Black IP Transport (Storm Cloud) for implementation in SACCS -Continue to update the SACCS core to facilitate Build 1.1 and the Cybersecurity Operations Cell -Develop and integrate the HAIPE Management Terminal (HMT) -Update and deliver training to onsite teams in use of Build 1.1 hardware -Document and maintain the configuration management (CM) for all designs, drawings, and publications -Purchase hardware in support of Build 1.1 <p>Port Expansion Processor (PEP) Replacement</p> <ul style="list-style-type: none"> -Continue TMRR efforts in support of the new PEPs and future SACCS-R efforts -Continue to update the SACCS core to facilitate PEP-R -Perform site modifications in support of PEP-R -Update and deliver training to onsite teams on use of PEP hardware -Document and maintain the CM for all designs, drawings, and publications -Purchase hardware in support of PEP-R <p>Build 1.2</p> <ul style="list-style-type: none"> -Continue TMRR efforts to facilitate Build 1.2 to include a temporary modification to address near term obsolescence issues -Continue transition of TDM circuits to IP circuits through SPO/DISA process -Continue development and testing of Cybersecurity Operations Cell -Continue to facilitate CDS -Continue to update the SACCS core to facilitate Build 1.2 -Document and maintain the CM for all designs, drawings, and publications -Purchase hardware in support of Build 1.2 			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<p>-Perform site modifications in support of Build 1.2</p> <p>GBSD NC3 Terrestrial Integration (GNTI)</p> <ul style="list-style-type: none"> -Continue TMRR efforts to include a temporary modification to address near term obsolescence issues -Support fielding of SACCS-R GNTI efforts as a bridge to GBSD to facilitate Build 2.0 solution -Continue to update the SACCS core to facilitate GNTI -Purchase hardware in support of GNTI <p><i>FY 2023 Plans:</i></p> <p>Port Expansion Processor (PEP) Replacement</p> <ul style="list-style-type: none"> -Complete TMRR efforts in support of the new PEPs to support SACCS-R efforts -Continue to update the SACCS core to facilitate PEP-R -Continue updating and deliver training to onsite teams on use of PEP hardware -Document and maintain the CM for all designs, drawings, and publications -Purchase hardware in support of PEP-R -Perform site modifications in support of PEP-R <p>Build 1.2</p> <ul style="list-style-type: none"> -Continue TMRR efforts to facilitate Build 1.2 to include a temporary modification to address near term obsolescence issues -Continue transition of TDM circuits to IP circuits through SPO/DISA process -Continue development of Cybersecurity Operations Cell and TRR -Continue to facilitate CDS solution -Continue to update the SACCS core to facilitate Build 1.2 -Document and maintain the CM for all designs, drawings, and publications -Initiate fielding of Cybersecurity Operations Cell -Facilitate Cybersecurity penetration testing of Cyber Security Operation Cell -Purchase hardware in support of Build 1.2 -Perform site modifications in support of Build 1.2 <p>GNTI</p> <ul style="list-style-type: none"> -Continue TMRR efforts to include a temporary modification to address near term obsolescence issues -Support fielding of SACCS-R GNTI efforts as a bridge to GBSD to facilitate Build 2.0 solution -Support preliminary design for the modifications to the GBSD Trainer -Continue to update the SACCS core to facilitate GNTI 			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
-Purchase hardware in support of GNTI			
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> Funding increase due to continuing efforts to implement/test temporary modifications to support interim TDM-IP transition/OMNI Crypto replacement, the completion of Build 1.2, and the additional implementation of GNTI connectivity capability.			
Accomplishments/Planned Programs Subtotals	22.124	15.202	22.725

	FY 2021	FY 2022
<i>Congressional Add:</i> NC3 Architecture	8.000	-
<i>FY 2021 Accomplishments:</i> N/A		
Congressional Adds Subtotals	8.000	-

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 PE 0101316F: <i>Strategic Command and Control (833140)</i>	24.520	29.539	31.993	-	31.993	29.680	26.773	27.988	27.977	Continuing	Continuing

Remarks

E. Acquisition Strategy
 Programmed funds continue to support TMRR efforts including a temporary modification to address near-term obsolescence issues (TDM-IP). The program is using a task order under the ICBM Ground Subsystems Support Contract and organic support from the 595 SCS and the 309 SWEG to conduct TMRR efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
3600 / 7				PE 0101316F / Worldwide Joint Strategic Communications						671820 / Strategic Automated Command and Control System					
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
SACCS-R TMRR	SS/CPFF	Northrop Grumman : Layton, UT	-	18.200	Nov 2020	11.433	Nov 2021	17.759	Nov 2022	-		17.759	Continuing	Continuing	-
Subtotal			-	18.200		11.433		17.759		-		17.759	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
SACCS-R Engineering Development	Various	Various : Various	-	0.790	Nov 2020	1.000	Nov 2021	0.670	Nov 2022	-		0.670	Continuing	Continuing	-
NC3 Architecture Development	Various	Various : Various	-	8.000		-		-		-		-	Continuing	Continuing	-
Subtotal			-	8.790		1.000		0.670		-		0.670	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
SACCS-R Development Test & Evaluation	Various	Various : Various	-	0.785	Nov 2020	0.271	Dec 2021	0.645	Nov 2022	-		0.645	Continuing	Continuing	-
Subtotal			-	0.785		0.271		0.645		-		0.645	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
SACCS-R Other Program Support Costs (PSC)	Various	Various : Various	-	1.360	Jan 2021	1.259	Nov 2021	2.273	Nov 2022	-		2.273	Continuing	Continuing	-
SACCS-R Integration Support	C/FFP	BAE Systems, Inc. : Hill AFB, UT	-	0.989	Jan 2021	1.239	Nov 2021	1.378	Nov 2022	-		1.378	Continuing	Continuing	-
Subtotal			-	2.349		2.498		3.651		-		3.651	Continuing	Continuing	N/A

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Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
Costs and services in support of program office management and administration processes such as: program oversight, resource justification, budget and programming, milestone and scheduling--PMA costs.

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	30.124	15.202	22.725	-	22.725	Continuing	Continuing	N/A

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101316F / <i>Worldwide Joint Strategic Communications</i>	Project (Number/Name) 671820 / <i>Strategic Automated Command and Control System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Strategic Automated Command and Control System</i>				
SACCS-R Technology Maturation/Risk Reduction	1	2021	3	2023
SACCS-R TDM-IP 1.1	1	2021	3	2022
SACCS-R TDM-IP 1.1 Decision to Retain	3	2022	3	2022
SACCS-R PEP	1	2021	1	2023
SACCS-R TDM-IP 1.2	1	2021	3	2023
SACCS-R TDM-IP 1.2 Decision to Retain	3	2023	3	2023
GNTI	1	2022	4	2027
SACCS-R PDR	3	2024	3	2024
SACCS-R Milestone B	3	2024	3	2024
SACCS-R Engineering and Manufacturing Development	4	2024	4	2027
SACCS-R Build 2.0	4	2024	4	2027
SACCS-R CDR	3	2025	3	2025