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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Air Force **Date:** March 2023

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0101316F / <i>Worldwide Joint Strategic Communications</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	-	11.712	22.708	24.653	0.000	24.653	22.779	22.519	14.477	8.032	0.000	126.880
671820: <i>Strategic Automated Command and Control System</i>	-	11.712	22.708	24.653	0.000	24.653	22.779	22.519	14.477	8.032	0.000	126.880
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) 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 Sentinel.

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 Sentinel fielding plans.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver SACCS 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. In FY22 0.700M was expended for civilian pay expenses in this program element, and in FY23 0.300M 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	15.202	22.725	2.597	0.000	2.597
Current President's Budget	11.712	22.708	24.653	0.000	24.653
Total Adjustments	-3.490	-0.017	22.056	0.000	22.056
• 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	-3.000	0.000			
• SBIR/STTR Transfer	-0.490	0.000			
• Other Adjustments	0.000	-0.017	22.056	0.000	22.056

**Change Summary Explanation**

FY22 reduced by -.490 million for Small Business Innovative Research (SBIR) and -\$3 million for reprogramming source on FY22-51PA  
 FY24 increase fully funds SACCS-R 1.2 Build, which includes the continuation of the Internet Protocol (IP) backbone upgrade as well as the development of the Cybersecurity Operations Cell.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
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<b>Title:</b> SACCS Replacement	11.712	22.708	24.653
<b>Description:</b> 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; supports a bridge connection to Sentinel through Sentinel NC3 Terrestrial Integration (SNTI); and supports meeting the Chairman Joint Chiefs of Staff Nuclear Technical Performance Criteria and Operational Standards (CJCSI 6811.01).			
<b>FY 2023 Plans:</b>			
Port Expansion Processor (PEP) Refresh			
- Port Expansion Processor (PEP) Replacement (PEP-R)			
- 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 Configuration Management (CM) for all designs, drawings, and publications			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<ul style="list-style-type: none"> <li>- Purchase hardware in support of PEP-R</li> <li>- Perform site modifications in support of PEP-R</li> </ul> <p>1.2 Program</p> <ul style="list-style-type: none"> <li>- Continue TMRR efforts to facilitate the 1.2 program to include a temporary modification to address near term obsolescence issues</li> <li>- Continue transition of TDM circuits to IP circuits through the System Program Office (SPO)/Defense Information Systems Agency (DISA) process for establishing new circuits</li> <li>- Continue development of Cybersecurity Operations Cell and Test Readiness Review (TRR)</li> <li>- Continue to facilitate Cross Domain Solution (CDS)</li> <li>- Continue to update the SACCS core to facilitate the 1.2 program</li> <li>- Document and maintain the CM for all designs, drawings, and publications</li> <li>- Initiate fielding of all aspects of Cybersecurity Operations Cell</li> <li>- Facilitate Cybersecurity penetration testing of Cybersecurity Operations Cell</li> <li>- Purchase hardware in support of the 1.2 program</li> <li>- Perform site modifications in support of the 1.2 program</li> <li>- Design of Black IP Transport (Storm Cloud) for implementation in SACCS</li> </ul> <p>Sentinel NC3 Terrestrial Integration (SNTI) Program</p> <ul style="list-style-type: none"> <li>- Continue TMRR efforts to include a temporary modification to address near term obsolescence issues</li> <li>- Support fielding of SACCS-R SNTI efforts as a bridge to Sentinel to facilitate the 2.0 program solution</li> <li>- Support preliminary design for the modifications to the Sentinel Trainer</li> <li>- Continue to update the SACCS core to facilitate SNTI</li> <li>- Purchase hardware in support of SNTI</li> </ul> <p>2.0 Program</p> <ul style="list-style-type: none"> <li>- Develop requirement documents to support design and development efforts</li> <li>- Continue programmatic efforts to finalize 1.2/SNTI programs</li> <li>- Continue transition of TDM circuits to IP circuits through DISA process for establishing new circuits</li> <li>- Order circuits through DISA storefront</li> <li>- Continue last mile installation of new circuits from DISA point of presence to the SACCS terminal</li> <li>- Continue design of updated Navy Modernized Hybrid Solution (NMHS) interface changes</li> <li>- Continue design of Black IP Transport (Storm Cloud) for implementation in SACCS</li> <li>- Start design of software to modernize core message processing</li> </ul>				

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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0101316F / <i>Worldwide Joint Strategic Communications</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<ul style="list-style-type: none"> <li>- Document and maintain the configuration management for all designs, drawing, and publications associated with SACCS-R</li> </ul> <p><b>FY 2024 Plans:</b></p> <p>1.2 Program</p> <ul style="list-style-type: none"> <li>- Continue TMRR efforts to facilitate 1.2 program to include a temporary modification to address near term obsolescence issues</li> <li>- Continue transition of TDM circuits to IP circuits through SPO/DISA process</li> <li>- Continue development of Cybersecurity Operations Cell and TRR</li> <li>- Continue to facilitate CDS solution</li> <li>- Continue to update the SACCS core to facilitate 1.2 program</li> <li>- Document and maintain the CM for all designs, drawings, and publications</li> <li>- Initiate fielding of all aspects of Cybersecurity Operations Cell</li> <li>- Facilitate Cybersecurity penetration testing of Cyber Security Operation Cell</li> <li>- Purchase hardware in support of 1.2 program</li> <li>- Perform site modifications in support of 1.2 program</li> <li>- Continue design of Black IP Transport (Storm Cloud) for implementation in SACCS</li> </ul> <p>SNTI Program</p> <ul style="list-style-type: none"> <li>- Continue TMRR efforts to include a temporary modification to address near term obsolescence issues</li> <li>- Support fielding of SACCS-R SNTI efforts as a bridge to Sentinel to facilitate 2.0 program solution</li> <li>- Support preliminary design for the modifications to the Sentinel Trainer</li> <li>- Continue to update the SACCS core to facilitate SNTI program</li> <li>- Purchase hardware in support of SNTI program</li> </ul> <p>2.0 Program</p> <ul style="list-style-type: none"> <li>- Continue to develop requirement documents to support design and development efforts</li> <li>- Continue transition of TDM circuits to IP circuits through DISA process for establishing new circuits</li> <li>- Order circuits through DISA storefront</li> <li>- Complete last mile installation of new circuits from DISA point of presence to the SACCS terminal</li> <li>- Continue design of updated Navy Modernized Hybrid Solution (NMHS) interface changes</li> <li>- Continue design of Black IP Transport (Storm Cloud) for implementation in SACCS</li> <li>- Start design of software to modernize core message processing</li> <li>- Document and maintain the configuration management for all designs, drawing, and publications associated with SACCS-R</li> <li>- Develop documentation in support of MS-B / EMD</li> <li>- Update Cybersecurity Operations Cell design to include all SACCS 2.0 equipment/sites</li> </ul>				

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Air Force	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0101316F / <i>Worldwide Joint Strategic Communications</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2022	FY 2023	FY 2024
- Continue development and testing of Cybersecurity Operations Cell - Update SACCS core to modernize message processing and SACCS Ops Center - Develop/implement two-factor authentication for all SACCS end users  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Funding increase due to the additional implementation of Sentinel connectivity capability, as well as, continuing to test/implement SNTI/1.2 Program/PEP solution.			
<b>Accomplishments/Planned Programs Subtotals</b>	11.712	22.708	24.653

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF 03 PE 0101316F: <i>Strategic Command and Control (833140)</i>	29.751	31.993	25.096	-	25.096	26.842	27.871	28.278	28.879	0.000	198.710

**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 2024 Air Force													Date: March 2023		
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 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
SACCS-R TMRR	SS/CPFF	Northrop Grumman : Layton, UT	-	7.678	Nov 2021	17.546	Nov 2022	16.173	Nov 2023	-		16.173	0.000	41.397	0.000
<b>Subtotal</b>			-	7.678		17.546		16.173		-		16.173	0.000	41.397	N/A
Support (\$ 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
SACCS-R Engineering Development	Various	Various : Various	-	0.760	Nov 2021	0.670	Nov 2022	2.786	Nov 2023	-		2.786	0.000	4.216	0.000
<b>Subtotal</b>			-	0.760		0.670		2.786		-		2.786	0.000	4.216	N/A
Test and Evaluation (\$ 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
SACCS-R Development Test & Evaluation	Various	Various : Various	-	1.177	Dec 2021	0.645	Nov 2022	0.936	Nov 2023	-		0.936	0.000	2.758	0.000
<b>Subtotal</b>			-	1.177		0.645		0.936		-		0.936	0.000	2.758	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
SACCS-R Other Program Support Costs (PSC)	Various	Various : Various	-	0.858	Nov 2021	2.273	Nov 2022	3.343	Nov 2023	-		3.343	0.000	6.474	0.000
SACCS-R Integration Support	C/FFP	BAE Systems, Inc. : Hill AFB, UT	-	1.239	Nov 2021	1.574	Nov 2022	1.415	Nov 2023	-		1.415	0.000	4.228	-
<b>Subtotal</b>			-	2.097		3.847		4.758		-		4.758	0.000	10.702	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0101316F / <i>Worldwide Joint Strategic Communications</i>	<b>Project (Number/Name)</b> 671820 / <i>Strategic Automated Command and Control System</i>
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<b>Management Services (\$ in Millions)</b>				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	11.712	22.708	24.653	-	24.653	0.000	59.073	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2024 Air Force		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0101316F / <i>Worldwide Joint Strategic Communications</i>	<b>Project (Number/Name)</b> 671820 / <i>Strategic Automated Command and Control System</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

<b>Strategic Automated Command and Control System</b>	
SACCS-R Technology Maturation/Risk Reduction	
SACCS-R TDM-IP 1.1	
SACCS-R PEP Refresh	
SACCS-R TDM-IP 1.2	
SNTI	
Milestone B (Apr 2025)	
SACCS-R 2.0 Program	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Air Force		<b>Date:</b> March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Strategic Automated Command and Control System</i></b>				
SACCS-R Technology Maturation/Risk Reduction	1	2022	3	2025
SACCS-R TDM-IP 1.1	1	2022	1	2023
SACCS-R PEP Refresh	1	2022	2	2023
SACCS-R TDM-IP 1.2	1	2022	1	2026
SNTI	1	2022	4	2028
Milestone B (Apr 2025)	3	2025	3	2025
SACCS-R 2.0 Program	4	2022	4	2028