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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force **Date:** February 2019

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>							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	12.868	18.442	18.177	0.000	18.177	27.284	15.453	2.502	2.547	Continuing	Continuing
671820: <i>Strategic Automated Command and Control System</i>	-	12.868	18.442	18.177	0.000	18.177	27.284	15.453	2.502	2.547	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.

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 Chief 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.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver NC3 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, 0605832F, and 0605898F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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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Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		PE 0101316F I Worldwide Joint Strategic Communications				
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	
Previous President's Budget	6.272	10.442	18.177	0.000	18.177	
Current President's Budget	12.868	18.442	18.177	0.000	18.177	
Total Adjustments	6.596	8.000	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	7.000	8.000				
• Congressional Directed Transfers	0.000	0.000				
• Reprogrammings	0.000	0.000				
• SBIR/STTR Transfer	-0.404	0.000				
• Other Adjustments	0.000	0.000	0.000	0.000	0.000	
Change Summary Explanation						
FY18 Congressional Add (\$7.0M) for NC3 Architecture Development.						
FY18 SBIR reduction (-\$0.404M)						
FY19 Congressional Add (\$8.0M) for NC3 Architecture Development.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2018	FY 2019	FY 2020
Title: SACCS Replacement				12.868	18.442	18.177
Description: Design and develop replacement Strategic Automated Command Control System (SACCS). Replaces all SACCS network components with the Navy Automated Message Store and Forward (NOVA) System. Removing the Message Processing Server at Offutt AFB, NE. New equipment mitigates cybersecurity issues, improves Mean Time Between Failure rates, reliability, availability, improves user interface, decreases annual sustainment costs, addresses Diminishing Manufacturing Sources and Material Shortages and obsolescence challenges, and meets Chairman Joint Chiefs of Staff Nuclear Technical Performance Criteria and Operational Standards (CJCSI 6811.01).						
FY 2019 Plans:						
- Continue software development of the core message processor, the HAC/RMPE adapter, and the end user terminal software						
- Continue EMD system design up to Critical Design Review (CDR) (ensure critical supportability aspects including materiel availability, reducing the logistics footprint, incorporating cybersecurity and program protection measures in the design)						
- Finalize system/subsystem specifications, interface control documents, software requirements specifications and drawing package						
- Complete PDR						
- Develop RFP for Missile Procedure Training contractors						

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C. Accomplishments/Planned Programs (\$ in Millions)										FY 2018	FY 2019	FY 2020
- Begin missile procedure trainer development												
FY 2020 Plans: - Continue software development of the core message processor, the HAC/RMPE adapter, and the end user terminal software - Continue EMD system design up to Critical Design Review (CDR) (ensure critical supportability aspects including materiel availability, reducing the logistics footprint, incorporating cybersecurity and program protection measures in the design) - Finalize system/subsystem specifications, interface control documents, software requirements specifications and drawing package - Begin developmental testing - Complete CDR - Begin missile procedure trainer development												
FY 2019 to FY 2020 Increase/Decrease Statement: N/A												
Accomplishments/Planned Programs Subtotals										12.868	18.442	18.177
D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost	
• OPAF 03 PE 0101316F: Strategic Command and Control (833140)	5.938	2.979	0.300	-	0.300	3.349	1.525	0.258	0.263	Continuing	Continuing	
Remarks												
E. Acquisition Strategy Programmed funds continue to leverage technology development and architecture analysis conducted as part of MS B activities. Development activities transition to the 309 SMXG as the organic design agent.												
F. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0101316F / Worldwide Joint Strategic Communications				Project (Number/Name) 671820 / Strategic Automated Command and Control System					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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	-	2.555	Apr 2018	2.714	Oct 2018	-		-		-	Continuing	Continuing	-
SACCS-R TMRR Organic	PO	OO-ALC : Hill AFB, UT	-	1.111	Jun 2018	1.706	Oct 2018	-		-		-	Continuing	Continuing	-
SACCS-R EMD Organic	PO	OO-ALC : Hill AFB, UT	-	-		1.067	Jun 2019	5.956	Oct 2019	-		5.956	Continuing	Continuing	-
SACCS-R EMD	SS/CPFF	Northrop Grumman : Layton, UT	-	-		2.332	Jun 2019	5.826	Oct 2019	-		5.826	Continuing	Continuing	-
Subtotal			-	3.666		7.819		11.782		-		11.782	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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	-	0.921	May 2018	0.840	Oct 2018	1.741	Dec 2019	-		1.741	Continuing	Continuing	-
NC3 Architecture Development	Various	Various : Various	-	6.842	Oct 2018	8.000	Feb 2019	-		-		-	Continuing	Continuing	-
Subtotal			-	7.763		8.840		1.741		-		1.741	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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	-	0.409	Aug 2018	0.500	Jan 2019	2.099	Nov 2019	-		2.099	Continuing	Continuing	-
Subtotal			-	0.409		0.500		2.099		-		2.099	Continuing	Continuing	N/A

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Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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 Program Management Administration	Various	Various : Various	-	0.206	Dec 2017	0.957	Nov 2018	1.998	Nov 2019	-		1.998	Continuing	Continuing	-
SACCS-R Integration Support	C/FFP	BAE Systems, Inc. : Hill AFB, UT	-	0.824	Feb 2018	0.326	Oct 2018	0.557	Nov 2019	-		0.557	Continuing	Continuing	-
Subtotal			-	1.030		1.283		2.555		-		2.555	Continuing	Continuing	N/A

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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	12.868	18.442	18.177	-	18.177	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force			Date: February 2019		
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>

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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>Strategic Automated Command and Control System</i>																												
SACCS-R Technology Maturation/Risk Reduction																												
SACCS-R PDR (May 2019)																												
SACCS-R Milestone B (Jun 2019)																												
SACCS-R Engineering and Manufacturing Development																												
SACCS-R CDR (Jun 2020)																												
SACCS-R Milestone C (Jun 2022)																												
SACCS-R Production and Deployment																												
SACCS-R Full Operational Capability (FOC)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force			Date: February 2019
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	2018	3	2019
SACCS-R PDR (May 2019)	3	2019	3	2019
SACCS-R Milestone B (Jun 2019)	3	2019	3	2019
SACCS-R Engineering and Manufacturing Development	4	2019	4	2022
SACCS-R CDR (Jun 2020)	3	2020	3	2020
SACCS-R Milestone C (Jun 2022)	3	2022	3	2022
SACCS-R Production and Deployment	3	2022	4	2023
SACCS-R Full Operational Capability (FOC)	4	2023	4	2023