Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force											Date: March 2023	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 7: *Operational Systems Development*						**R-1 Program Element (Number/Name)** PE 0207439F *I Electronic Warfare Integrated Reprogramming (EWIR)*						

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	-	15.000	15.990	10.388	0.000	10.388	17.118	17.704	18.242	18.902	Continuing	Continuing
673310: *Electronic Warefare Integrated Reprogram RDT&E*	-	15.000	15.990	10.388	0.000	10.388	17.118	17.704	18.242	18.902	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Electronic Warfare Integrated Reprogramming (EWIR) program element hosts the DoD's first System of System Technology Integration Tool Chain for Heterogeneous Electronic Systems (STITCHES) Warfighter Application Team (SWAT) at the 350th Spectrum Warfare Wing (350 SWW). SWAT is an integration team employing, maintaining, and instructing other teams in the DoD how to use the STITCHES integration platform. STITCHES is a fully government developed, owned, and open-source Modular Open Systems Architecture (MOSA) toolchain and multi-classification information system that creates new capabilities by integrating incompatible DoD fielded systems and architectures together without the need to modify system source code. STITCHES' separable and community-based databases allow disparate teams across the DoD to utilize STITCHES and SWAT in separate security levels without comingling data. The 350 SWW will utilize SWAT to generate requested capability using the STITCHES interoperability software on systems both within and external to the 350 SWW and deploy the capabilities created to the requesting organizations. SWAT interfaces and integrates with other DoD systems and their authorities to support 350 SWW missions and HHQ directed activities. SWAT is responsible for testing and deploying STITCHES generated interoperability into DoD systems supported by the SWW, working with existing DoD test and certification organizations, and teaming with organizations outside of the SWW when adapting and creating novel system of systems using capabilities from these organizations. SWAT will deliver adaptive and cutting-edge electromagnetic spectrum capabilities that provide the warfighter a tactical and strategic competitive advantage and freedom to attack, maneuver, and defend.

SWAT is an agile software development team composed of a government tiger team, the STITCHES toolchain developer, and a secure cloud infrastructure and repository developer. SWAT includes a revolving team of subsystem subject matter experts when adapting DoD systems using STITCHES. SWAT is responsible for the execution of tasks employing STITCHES outlined in NDAA 2021 Section 804 and supports Joint All Domain Command and Control (JADC2) tasking and integration efforts in support of JADC2.

SWAT will conduct regular STITCHES training courses to scale the capability to the DoD. SWAT may team with other DoD organizations utilizing STITCHES to increase the scale of the deployed capabilities.

The STITCHES integration platform achieved a Cross Domain Solution (CDS) Authority to Operate (ATO) prior to the DoD's Raise The Bar (RTB) certification requirement process. The STITCHES integration platform will be submitted to the National Cross Domain Strategy and Management Office (NCDSMO) for Cross Domain Solution certification in FY23 and FY24.

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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 program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY23 0 was expended for civilian pay expenses in this program element, and in FY24 0 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 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**
Previous President's Budget	15.000	15.990	16.513	0.000	16.513
Current President's Budget	15.000	15.990	10.388	0.000	10.388
Total Adjustments	0.000	0.000	-6.125	0.000	-6.125
• 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	0.000	0.000	-6.125	0.000	-6.125

C. Accomplishments/Planned Programs ($ in Millions)	**FY 2022**	**FY 2023**	**FY 2024**
Title: Develop Deployment Strategy for STITCHES	4.750	5.063	3.289
Description: Develop Deployment Strategy for System Technology Integration Tool Chain for Heterogeneous Electronic Systems (STITCHES). This effort involves development of training and implementation process for STITCHES. **FY 2023 Plans:** Scope, lead, and deploy STITCHES integrations and train DoD personnel. **FY 2024 Plans:** Scope, lead, and deploy STITCHES integrations and train DoD personnel. **FY 2023 to FY 2024 Increase/Decrease Statement:** New start funding delay until 3Q FY22 caused under-execution in FY22, motivating a directed decrease in funding allocation in FY24.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 7: *Operational Systems Development*		**R-1 Program Element (Number/Name)** PE 0207439F *I Electronic Warfare Integrated Reprogramming (EWIR)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
FY 2022 Accomplishments: Led integration of 3rd-party electronic warfare architecture into EC-130, automated verification and validation tests on first 350 SWW EW lab deployment, Open Mission Systems (OMS) architectures using different versions, and a fielded major weapon system architecture to/from government reference architectures.			
Title: Accomplish Requirements Outlined in NDAA Section 804 (Verify, Validate and Test) **Description:** Improve existing STITCHES verification, validation, and testing capabilities and apply to STITCHES integrated systems in coordination with DoD test, accreditation, and certification authorities. **FY 2023 Plans:** Improve STITCHES verification, validation, and testing capabilities and apply to STITCHES integrated systems in coordination with DoD test, accreditation, and certification authorities. **FY 2024 Plans:** Improve STITCHES verification, validation, and testing capabilities and apply to STITCHES integrated systems in coordination with DoD test, accreditation, and certification authorities. **FY 2023 to FY 2024 Increase/Decrease Statement:** New start funding delay until 3Q FY22 caused under-execution in FY22, motivating a directed decrease in funding allocation in FY24. FY 2022 Accomplishments: Performed verification, validation, and testing for integration of 3rd-party electronic warfare architecture into EC-130, automated verification and validation tests on first 350 SWW EW lab deployment, Open Mission Systems (OMS) architectures using different versions, fielded major weapon system architecture to/from government reference architectures, and a deployed sensor/data network.	2.500	2.665	1.731
Title: Accomplish Requirements Outlined in NDAA Section 804 (Deploy Secure Cloud Structures) **Description:** The STITCHES integration platform includes NDAA 2021 Section 804 repositories within Controlled Unclassified Information (CUI) and FENCES cloud environments and stand-alone/edge structures. **FY 2023 Plans:** Deploy secure cloud and non-cloud structures and NDAA 2021 Section 804 repositories within FENCES environment. Maintain CUI cloud and stand-alone/edge structure ATOs. **FY 2024 Plans:**	2.500	2.665	1.731

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force		Date: March 2023
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C. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Deploy secure cloud and non-cloud structures and NDAA 2021 Section 804 repositories within FENCES environment. Maintain CUI cloud and stand-alone/edge structure ATOs. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** New start funding delay until 3Q FY22 caused under-execution in FY22, motivating a directed decrease in funding allocation in FY24. FY 2022 Accomplishments: Deployed the STITCHES integration platform to Controlled Unclassified Information (CUI)-based secure cloud and achieved an Authority to Operate (ATO) for www.stitches.mil. Achieved an ATO for the STITCHES integration platform for installation to stand-alone/edge information systems through Top Secret (TS)/Special Access Program (SAP).			
Title: Accomplish Requirements Outlined in NDAA Section 804 (Develop Kill Chains) ***Description:*** The System of System Technology Integration Tool Chain for Heterogeneous Electronic Systems (STITCHES) Warfighter Application Team (SWAT) will integrate DoD fielded systems together in different configurations of system of systems within mission planning time to create new capabilities without the need to modify system source code. ***FY 2023 Plans:*** Create novel kill chains involving previously incompatible weapon systems, sensor, and command, control, and communication systems from multiple military services in cooperation with United States Indo-Pacific Command, United States European Command, and 350 SWW accepted integration tasking. ***FY 2024 Plans:*** Create novel kill chains involving previously incompatible weapon systems, sensor, and command, control, and communication systems from multiple military services in cooperation with United States Indo-Pacific Command, United States European Command, and 350 SWW accepted integration tasking. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** New start funding delay until 3Q FY22 caused under-execution in FY22, motivating a directed decrease in funding allocation in FY24. FY 2022 Accomplishments: Developed integration of 3rd-party electronic warfare architecture into EC-130, automated verification and validation tests on first 350 SWW EW lab deployment, Open Mission Systems (OMS) architectures using different versions, a fielded major weapon system architecture to/from government reference architectures, and a deployed sensor/data network.	5.250	5.597	3.637
Accomplishments/Planned Programs Subtotals	15.000	15.990	10.388

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2024 Air Force	**Date:** March 2023
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207439F *I Electronic Warfare Integrated Reprogramming (EWIR)*

D. Other Program Funding Summary ($ in Millions)

 N/A

Remarks

 PE 0207439F funding allocation for FY24 is reduced 6.125M due to an extended Continuing Resolution period in FY22 during SWAT's New Start year. The delay in initial funding until Q3FY22 caused expenditures below prescribed goals. This under-execution motivated a directed reduction in FY24 funding allocation. The FY24 reduction will result in lower integration capacity from SWAT and lower DoD system SME support, slowing delivery of DoD fielded system integration capability to warfighters.

E. Acquisition Strategy

 Project utilizes existing DoD contracts to develop, maintain, and deploy interoperability within the DoD. SWAT will generate interoperability derived from system interface details as the requirements from NDAA 2021 Section 804 are delivered to DoD repositories. These details are delivered via existing DoD programs. SWAT will serve existing programs to train and deliver their interface details into existing repositories including those Section 804 compliant repositories maintained by the STITCHES team. SWAT's System Adaptation effort generates those interface artifacts for programs not able to perform those functions on their own. SWAT and SWAT supporting contracts can accept external funding when requests for support exceed SWAT programmed funding.

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

Appropriation/Budget Activity 3600 *I* 7	R-1 Program Element (Number/Name) PE 0207439F *I Electronic Warfare Integrated Reprogramming (EWIR)*	Project (Number/Name) 673310 *I Electronic Warefare Integrated Reprogram RDT&E*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development, STITCHES Toolchain	C/CPFF	Various : TBD	-	7.500	Jul 2022	7.995	Apr 2023	6.488	Dec 2023	-		6.488	Continuing	Continuing	-
Product Development, STITCHES Secure Cloud Infrastructure and Section 804 Repositories	C/Various	Various : TBD	-	2.750	Aug 2022	2.932	Apr 2023	2.400	Dec 2023	-		2.400	Continuing	Continuing	-
Product Development, System Adaption	C/Various	Various : TBD	-	2.865	Aug 2022	3.054	Apr 2023	0.000	Dec 2023	-		0.000	Continuing	Continuing	-
Subtotal			-	13.115		13.981		8.888		-		8.888	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support	Various	Various : TBD	-	1.885	Aug 2022	2.009	Apr 2023	1.500	Dec 2023	-		1.500	Continuing	Continuing	-
Subtotal			-	1.885		2.009		1.500		-		1.500	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	15.000		15.990		10.388		-		10.388	Continuing	Continuing	N/A

Remarks

Funding for Subject Matter Experts (SMEs) supporting system adaptation reduced to $0 because of reduction in FY24 funding allocation.

Exhibit R-4, **RDT&E Schedule Profile:** PB 2024 Air Force		**Date:** March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207439F / *Electronic Warfare Integrate d Reprogramming (EWIR)*	**Project (Number/Name)** 673310 / *Electronic Warefare Integrated Reprogram RDT&E*

	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
STITCHES Development																												
Develop Offensive and Defensive Electromagnetic Spectrum Capabilities																												
STITCHES Test and Evaluation																												
Test & Evaluate Offensive and Defensive Electromagnetic Spectrum Capabilities																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 I 7	R-1 Program Element (Number/Name) PE 0207439F I Electronic Warfare Integrated Reprogramming (EWIR)	Project (Number/Name) 673310 I Electronic Warefare Integrated Reprogram RDT&E	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
STITCHES Development				
Develop Offensive and Defensive Electromagnetic Spectrum Capabilities	1	2022	4	2028
STITCHES Test and Evaluation				
Test & Evaluate Offensive and Defensive Electromagnetic Spectrum Capabilities	1	2022	4	2028

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