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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force **Date:** March 2024

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 0207439F / <i>Electronic Warfare Integrated Reprogramming (EWIR)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	15.990	10.388	17.149	0.000	17.149	17.735	18.275	18.936	22.316	Continuing	Continuing
673310: <i>Electronic Warfare Integrated Reprogram RDT&E</i>	-	15.990	10.388	17.149	0.000	17.149	17.735	18.275	18.936	22.316	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 co-mingling 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 350 SWW, working with existing DoD test and certification organizations, and teaming with organizations outside of the 350 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 a software development team composed of a government tiger team, the STITCHES toolchain developer, a secure cloud infrastructure and repository developer, and mission partners. 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 FY24.

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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 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	15.990	10.388	17.118	0.000	17.118
Current President's Budget	15.990	10.388	17.149	0.000	17.149
Total Adjustments	0.000	0.000	0.031	0.000	0.031
• 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	0.031	0.000	0.031

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p>Title: Develop Deployment Strategy for STITCHES</p> <p>Description: This effort develops the deployment strategy of the STITCHES training and implementation process.</p> <p>FY 2024 Plans: Scope, lead, and deploy STITCHES integrations and train DoD personnel.</p> <p>FY 2025 Plans: Scope, lead, and deploy STITCHES integrations and train DoD personnel. Lead continual development for STITCHES Platform and new certification processes at 350 SWW direction.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased to stand up STITCHES-based Artificial intelligence data battle labs in Europe and the Pacific Areas of Operation.</p>	5.063	3.289	4.945
<p>Title: STITCHES Verification, Validation, and Test Activities</p> <p>Description: Improve existing STITCHES verification, validation, and testing capabilities and apply to STITCHES-integrated systems in coordination with DoD test, accreditation, and certification authorities.</p> <p>FY 2024 Plans:</p>	2.665	1.731	2.841

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>Improve STITCHES verification, validation, and testing capabilities and apply to STITCHES integrated systems in coordination with DoD test, accreditation, and certification authorities.</p> <p>FY 2025 Plans: Improve STITCHES verification, validation, and testing capabilities through automation, Graphical User Interface development, and streamline the developmental process for STITCHES toolchain and 350 SWW projects.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased to execute Technology Integration experiments with Command and Control Data Models, moving-target enabling linkages, and software defined wide area networks.</p>				
<p>Title: Deploy STITCHES Secure Cloud Structures/Information Systems</p> <p>Description: The STITCHES information systems are the portion of the STITCHES Platform including NDAA 2021 Section 804 repositories at all classification levels deployed into Controlled Unclassified Information (CUI) and FENCES cloud environments as well as other stand-alone/edge unclassified & classified infrastructures.</p> <p>FY 2024 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.</p> <p>FY 2025 Plans: Continue deploying STITCHES toolchain and repository into web-based infrastructure for unclassified/classified information systems. Deploy secure cloud and non-cloud structures and NDAA 2021 Section 804 repositories within FENCES environment. Maintain CUI and classified cloud and stand-alone/edge structure ATOs.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased to provide enterprise program management including creating and maintaining Authorizations to Operate (ATO) usable across the DoD security classification guidance by establishing and maintaining cloud and locally accessible data repositories capable of integrating systems from unclassified through TS//SAR//SCI on both Department of Defense information networks (DODIN) and stand-alone systems.</p>		2.665	1.731	2.841
<p>Title: Develop STITCHES Kill Chain Applications & Enabling Emerging Electromagnetic Spectrum Operations (EMSO) Technology</p> <p>Description: 350 SWW utilizes the ad-hoc System of System toolchain to integrate fielded DoD systems together in different configurations to create new EW/EMSO capabilities without the need to modify system source code. Conduct risk reduction and</p>		5.597	3.637	6.522

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p>prototyping activities on emerging and enabling technologies to inform future EMSO capabilities informed by internal and external stakeholders.</p> <p>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.</p> <p>FY 2025 Plans: Develop EW/EMSO capabilities through creation novel kill chains and EA/ES/EP involving previously incompatible weapon systems, Mission Design Series, sensor, and command, control, and communication systems. The development of advanced EW capability projects through collaboration of all military services in cooperation with multiple MAJCOMs to support multiple AORs such as United States Indo-Pacific Command and European Command. The 350 SWW will focus on traditional EW/EMSO problem sets and new gaps in air, maritime, space, and cyberspace domains.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased to provide STITCHES Platform improvements and upgrades involving previously incompatible weapon systems, Mission Design Series, sensor, and command, control, and communication systems; and the partnering with other STITCHES integration efforts to facilitate wide-spread adoption and scaling of the capability.</p>			
Accomplishments/Planned Programs Subtotals	15.990	10.388	17.149

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

Remarks
PE 0207439F funding allocation for FY24 was reduced to \$10.388M due to initial expenditure rates below prescribed goals. FY25 funding increase provides the program full level of effort funding.

E. Acquisition Strategy
Accomplish studies, analysis, concept demonstrations, prototyping and engineering; efforts will be conducted using contracting strategies deemed most appropriate; generally using competitive contracts and/or other obligating documentation considered most appropriate by the obligating and performing agencies involved. 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 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207439F / <i>Electronic Warfare Integrated Reprogramming (EWIR)</i>	Project (Number/Name) 673310 / <i>Electronic Warfare Integrated Reprogram RDT&E</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
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>Develop Deployment Strategy for STITCHES</i>	
Develop Offensive and Defensive Electromagnetic Spectrum Capabilities	
<i>STITCHES Verification, Validation, and Test Activities</i>	
Test & Evaluate Offensive and Defensive Electromagnetic Spectrum Capabilities	
<i>Deploy STITCHES Secure Cloud Structures/ Information Systems</i>	
Deploy Repositories into CUI and FENCES Cloud Environments	
<i>Develop STITCHES Kill Chain Applications & Enabling Emerging Electromagnetic Spectrum Operations (EMSO) Technology</i>	
Integrate Fielded DoD Systems Together in Different Configurations	

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Develop Deployment Strategy for STITCHES</i>				
Develop Offensive and Defensive Electromagnetic Spectrum Capabilities	1	2023	4	2029
<i>STITCHES Verification, Validation, and Test Activities</i>				
Test & Evaluate Offensive and Defensive Electromagnetic Spectrum Capabilities	1	2023	4	2029
<i>Deploy STITCHES Secure Cloud Structures/Information Systems</i>				
Deploy Repositories into CUI and FENCES Cloud Environments	1	2023	4	2029
<i>Develop STITCHES Kill Chain Applications & Enabling Emerging Electromagnetic Spectrum Operations (EMSO) Technology</i>				
Integrate Fielded DoD Systems Together in Different Configurations	1	2023	4	2029