Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Information Systems Agency	Date: March 2023
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303153K / *Defense Spectrum Organization*

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	235.725	19.302	19.598	35.995	-	35.995	26.084	21.186	16.368	16.695	Continuing	Continuing
JS1: *Joint Spectrum Center*	235.725	19.302	19.598	35.995	-	35.995	26.084	21.186	16.368	16.695	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Spectrum Organization (DSO) delivers the Electromagnetic Spectrum (EMS), which consists of frequencies that support worldwide military uses such as mobile phone networks, radios, navigation, and weapons. The DSO supports EMS management through providing software capabilities, engineering, and analytical services to Combatant Commanders, the Department of Defense (DoD) Chief Information Officer (CIO), Military Services, and Defense Agencies. These capabilities mitigate effects from harmful EMS interference, such as interruption of access, and allow friendly forces to gain and maintain advantages. Accessing the spectrum enables decision making for friendly operations. Access to the radio frequency portion of the EMS provides United States and coalition forces near real-time electromagnetic spectrum data to support operational requirements critical to national security.

The DSO delivers capabilities to the DoD integrated spectrum plans and strategies to address current and future needs for DoD spectrum access. These capabilities support decision making related to warfighting, domestic sharing initiatives, and international spectrum treaties. The DSO also delivers enterprise spectrum management capabilities to execute spectrum business management processes.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	19.302	19.708	36.730	-	36.730
Current President's Budget	19.302	19.598	35.995	-	35.995
Total Adjustments	0.000	-0.110	-0.735	-	-0.735
• Congressional General Reductions	-	-0.110			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustment	-	-	-0.735	-	-0.735

Change Summary Explanation

The decrease of -$0.735 in FY 2024 is due to reduction in requirements to develop new emerging spectrum technologies, spectrum capabilities within the Joint Ordnance Electromagnetic Environmental Effects (E3) Risk Assessment Database, and the number of prototype initiatives to be accomplished for DSO spectrum operations.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Information Systems Agency	Date: March 2023
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303153K *I Defense Spectrum Organization*

Note: FY 2022 amount includes -$0.705M that was transferred for the SBIR/STTR program.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Information Systems Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0303153K / *Defense Spectrum Organization*	Project (Number/Name) JS1 / *Joint Spectrum Center*	

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
JS1: *Joint Spectrum Center*	235.725	19.302	19.598	35.995	-	35.995	26.084	21.186	16.368	16.695	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Title Change from New Spectrum Paradigms to Spectrum Strategic Planning & Engineering
Electromagnetic Battle Management (EMBM) is currently resourced to fulfill requirements described in the program's 2020 Capabilities Development Document (CDD). The 2021 EMS Strategy Implementation Plan will continue to guide future requirements.

A. Mission Description and Budget Item Justification

The DSO designs, develops, and maintains DoD automated spectrum management software capabilities and databases. These databases are primary sources of information for DoD access to and use of the electromagnetic (EM) spectrum. The DSO provides technical measurement and analysis to support DoD spectrum policy decisions, ensuring DoD systems are compatible with other spectrum dependent systems operating within the same EM environment (EME). Additional efforts improve warfighter EM spectrum utilization through modernized software capabilities, models, and algorithms to enable engineering, analysis, and planning.

Support programs and portfolios include the DoD Electromagnetic Environmental Effects (E3) program, Global Electromagnetic Spectrum Information System (GEMSIS) portfolio, Electromagnetic Battle Management (EMBM) portfolio, and Emerging Spectrum Technology (EST) program.

- The DoD E3 program ensures incorporation of E3 control and spectrum supportability in IT and National Security Systems (IT/NSS).
- The GEMSIS portfolio enables spectrum access to support data links and decision making at all levels of the DoD.
- The EMBM portfolio delivers software and functions to gain situational awareness of activities in the battlespace.
- The EST program identities opportunities and risks associated with emerging spectrum-related technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: DoD Electromagnetic Environmental Effects (E3) Program	3.074	3.431	3.134
Description: The DoD E3 Program supports the Joint Capabilities Integration and Development Systems (JCIDS) and other DoD acquisition processes to ensure E3 control and spectrum supportability engineering, analysis, compatibility assessments inform the development, testing, and procurement of IT/NSS. The E3 Program also supports the development of the Joint Ordnance E3 Risk Assessment Database (JOERAD) and Hazards of Electromagnetic Radiation to Ordnance (HERO) electromagnetic environmental effects surveys for DoD. • JOERAD provides real-time risk assessments to evaluate safety and identify equipment limitations in the operational EM environment, enabling operators to make critical decisions about hazards within the EM environments. Additionally,			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Information Systems Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303153K / *Defense Spectrum Organization*	**Project (Number/Name)** JS1 / *Joint Spectrum Center*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
program managers and capability developers perform Spectrum Supportability Risk Assessment (SSRA) on all programs acquiring or incorporating spectrum-dependent systems or equipment (per DoDI 4650.1). These assessments review regulatory, technical, and operational spectrum and E3 risks and mitigations. • HERO conducts EM field strength measurements of spectrum-dependent systems, platforms, and facilities located or installed where ordnance (artillery) is stored, transported, handled, and/or loaded. These surveys provide specific HERO mitigation guidance, such as power and frequency management, emission control, safe-separation distances, and operational restrictions to ensure ordnance safety while minimizing impacts to mission operational effectiveness. ***FY 2023 Plans:*** Key FY 2023 efforts include: • Conducting the Joint Ordnance Commander's Group (JOCG) HERO Subgroup meetings to support JOCG Executive Steering Committee and to develop/maintain HERO survey data records. • Conducting forward deployed base HERO surveys for Combatant Commands (CCMDs), Services, and Continental US (CONUS) based emitter surveys. This enables ordnance safety database validating and updating the DoD ordnance Radio Frequency (RF) safety requirements. • Updating and developing EME system profiles that provide situational awareness of systems in operating environments. • Conducting monthly DoD E3 Integrated Product Team (IPT) Meetings. • Supporting DoD CIO, the Joint Staff, and other DoD Components with E3, spectrum, and hazards of EM radiation. • Reviewing and updating Joint Staff and DoD CIO JCIDS and Information Support Plan (ISP) acquisition documents. • Providing E3 and Spectrum Supportability (SS) training to the DoD Components. • Developing and maintaining E3 and SS training curricula at the Defense Acquisition University. ***FY 2024 Plans:*** Key FY 2024 efforts include: • Continuing to conduct JOCG HERO Subgroup meetings to support JOCG Executive Steering Committee and to develop/maintain the HERO susceptibility data records. • Continuing to conduct forward deployed base HERO surveys for the CCMDs, Services, and CONUS based emitter surveys to enable ordnance safety database validating and updating the DoD ordnance RF safety requirements. • Updating and developing EME system profiles that provide situational awareness of systems in operating environments. • Conducting monthly DoD E3 Integrated Product Team (IPT) Meetings. • Supporting DoD CIO, the Joint Staff, and other DoD Components with E3, spectrum, and hazards of EM radiation. • Reviewing and updating Joint Staff and DoD CIO JCIDS and ISP acquisition documents. • Providing E3 and Spectrum Supportability (SS) training to the DoD Components.			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Information Systems Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303153K / *Defense Spectrum Organization*	**Project (Number/Name)** JS1 / *Joint Spectrum Center*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
• Developing and maintaining E3 and SS training curricula at the Defense Acquisition University. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The decrease of -$0.297 from FY 2023 to FY 2024 is due to three E3 and SS training courses moving to on-line virtual training			
Title: Global Electromagnetic Spectrum Information System (GEMSIS) ***Description:*** GEMSIS delivers a portfolio of spectrum management software capabilities that: • Provide business process execution, • Provide situational awareness of friendly spectrum usage, and • Deconflicts competing The mission requirements for spectrum use. It provides • Provide DoD and mission partners with direct online access to comprehensive, relevant, and trusted spectrum data ***FY 2023 Plans:*** DSO plans development for two version releases for Joint Spectrum Data Repository (JSDR) which will deliver additional analysis capabilities. ***FY 2024 Plans:*** DSO will develop an additional two version releases for Joint Spectrum Data Repository (JSDR) which will deliver additional analysis capabilities. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The increase of $0.018 from FY 2023 to FY 2024 is due to JSDR maintenance and version releases, which will provide improved user access to the Spectrum database components and analytical capabilities.	0.751	0.598	0.616
Title: Electromagnetic Battlefield Management (EMBM) (C2 Capabilities/Data Interface&Visualization, EW Planning/Mgt Tool) ***Description:*** The EMBM capability supports the DoD Electronic Warfare (EW) Strategy objective of fielding advanced EMBM capabilities. It also supports the DoD Electromagnetic Spectrum Strategy goal of increasing agility of DoD EMS operations by developing capabilities to preform near-real-time EMS operations (EMSO). EMBM capabilities: • Extract and analyze information from multiple sources across security levels. • Enables situational understanding of the Electromagnetic Operating Environment (EMOE). • Display the EMOE browser-based desktop environment and identify impacts of Electromagnetic Interference (EMI). • Enable a suite of tools that provide situational awareness, Command and Control (C2), decision support, and training. • Provide near real-time integration and display of foundational data and processed EMS feeds.	12.620	13.313	30.143

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Information Systems Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303153K / *Defense Spectrum Organization*	**Project (Number/Name)** JS1 / *Joint Spectrum Center*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
These expanded capabilities are useful for Joint Electromagnetic Spectrum Operations (JEMSO) to access information from other related operational systems that provide a long-term solution for operational EMS planning, execution, and assessment capabilities. ***FY 2023 Plans:*** Key FY 2023 efforts include: • Continue developing the EMBM mission capability in support of DoD's Electromagnetic Spectrum Strategy. • Developing EMBM to interoperate with Service-developed tools to enable prioritization, interrogation, and direction of Service Component electromagnetic spectrum activities. • Continue developing new C2 capabilities, Data Interface & Visualization requirements, and the EW planning and management tool. ***FY 2024 Plans:*** Key FY 2024 efforts include: • Continue developing the EMBM mission capability in support of DoD's Electromagnetic Spectrum Strategy. Specifically: o Continuing releases of the Minimum Viability Capability Release One (MVCR1+), which expands EMS situational awareness through providing additional data. o Deploying MVCR1 onto Joint Worldwide Intelligence Communications System (JWICS) (the system that houses Top Secret/Sensitive Compartmented Information). o Delivering the MVCR2 Decision Support prototype, which supports the EMS planning process. o Integrating Situational Awareness and Decision Support. o Launching Training Capability effort. o Planning for C2 capability. • Continue developing new C2 capabilities, Data Interface & Visualization requirements, and the planning and management tool. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The increase of +$16.830 from FY 2023 to FY 2024 is due to increased scale of software development and includes operational deployment to additional locations. The increase delivers capability for Warfighters to capture and convey the boundaries of spectrum maneuver in the electromagnetic environment. EMBM capabilities provide visualization of the EMOE so CCMDs understand the mission situation, explore and assess alternative courses of action during mission operations, and execute C2 operations.			
Title: Spectrum Strategic Planning & Engineering	2.857	2.256	2.102
Description: The Emerging Spectrum Technology (EST) program researches emerging spectrum-related technologies and evaluates applicability to improve future warfighter EM spectrum utilization. The EST improves EM spectrum utilization through			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Information Systems Agency		Date: March 2023
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
technology innovation, investigating emerging technologies, and evaluating applicability. The goal of the EST program is to identify opportunities and risks associated with emerging technologies in the early stages of development, influence technology development to maximize DoD spectrum utilization, and to ensure spectrum policies incorporate optimal technology to meet DoD mission requirements. There is an increased focus on Dynamic Spectrum Access (DSA) capabilities. DSA is realized through wireless networking architectures and technologies to enable wireless devices to adapt spectrum access according to specific criteria. These specific criteria include policy constraints, spectrum availability, and application performance requirements. ***FY 2023 Plans:*** Key FY 2023 efforts include: • Supporting evaluation of future and existing spectrum analysis tools. • Continuing collaboration efforts with the Science and Technology community to develop and execute technology roadmaps and integration strategies. • Revising spectrum management architecture to reflect transforming spectrum operations in accordance with the new DoD EMS Spectrum Seniority Strategy. • Prototyping capabilities that provide increased operational agility. • Continuing development initiatives such as roadmaps, standards, architectures, and business processes to exploit or minimize the impact of emerging technologies on DoD spectrum operations. ***FY 2024 Plans:*** Key FY 2024 efforts include: • Continuing to support evaluation of future and existing spectrum analysis tools. • Continuing collaboration efforts with the Science and Technology community to develop and execute technology roadmaps and integration strategies. • Continuing to revise spectrum management architecture to reflect transforming spectrum operations in accordance with the new DoD EMS Spectrum Seniority Strategy. • Continuing to prototype capabilities that provide increased operational agility. • Continuing development initiatives such as roadmaps, standards, architectures, and business processes to exploit or minimize the impact of emerging technologies on DoD spectrum operations. ***FY 2023 to FY 2024 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Information Systems Agency		Date: March 2023
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
The decrease of -$0.154 from FY 2023 to FY 2024 is due to a decrease in one prototype initiative related to the assessment of modeling and simulation capabilities.			
Accomplishments/Planned Programs Subtotals	19.302	19.598	35.995

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• O&M, DW/PE 0303153K: *O&M, DW*	35.743	31.023	44.063	-	44.063	47.265	49.312	50.885	51.825	Continuing	Continuing

Remarks

D. Acquisition Strategy

Competition is used under existing Indefinite Delivery Indefinite Quantity (IDIQ) contracts. Task orders will be a mix of Firm Fixed Price (FFP) and Cost-Plus Fixed Fee (CPFF) as dictated by specific tasks accomplished.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Defense Information Systems Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303153K / *Defense Spectrum Organization*	**Project (Number/Name)** JS1 / *Joint Spectrum Center*	

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
Technical Engineering Services 1	C/FFP	Multi : Various	196.299	9.786	Apr 2022	10.070	Jan 2023	18.976	Jan 2024	-		18.976	Continuing	Continuing	Continuing
Technical Engineering Services 2	MIPR	Various : Various	27.361	9.152	Nov 2021	9.033	Nov 2022	16.063	Nov 2023	-		16.063	Continuing	Continuing	Continuing
		Subtotal	223.660	18.938		19.103		35.039		-		35.039	Continuing	Continuing	N/A

Test and Evaluation ($ 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
Test & Evaluation	MIPR	JITC : Ft. Huachuca	2.312	-		-		-		-		-	0.000	2.312	-
		Subtotal	2.312	-		-		-		-		-	0.000	2.312	N/A

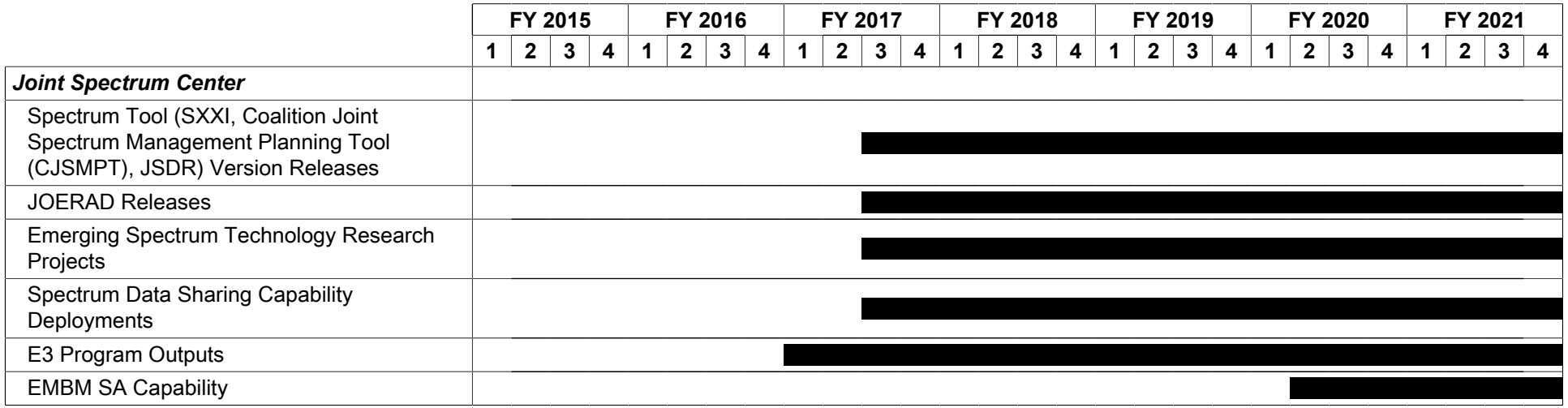
Management Services ($ in Millions)

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
Management Services	FFRDC	MITRE : Ft. Monmouth, NJ	9.753	0.364	Nov 2021	0.495	Nov 2021	0.956	Nov 2023	-		0.956	Continuing	Continuing	Continuing
		Subtotal	9.753	0.364		0.495		0.956		-		0.956	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	235.725	19.302		19.598		35.995		-		35.995	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Defense Information Systems Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303153K / *Defense Spectrum Organization*	**Project (Number/Name)** JS1 / *Joint Spectrum Center*



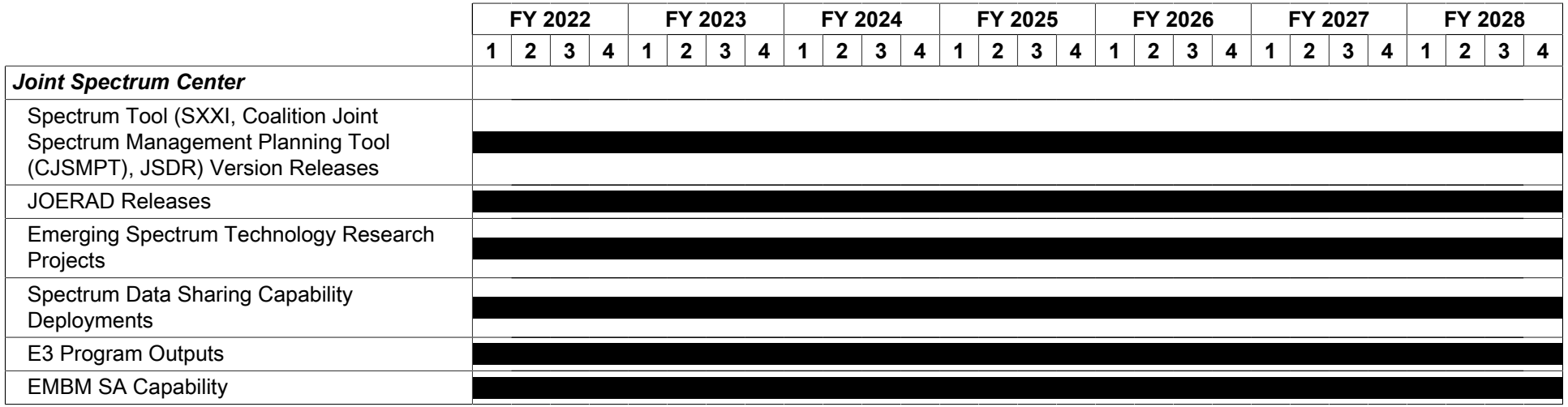


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Defense Information Systems Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0303153K / *Defense Spectrum Organization*	**Project (Number/Name)** JS1 / *Joint Spectrum Center*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Joint Spectrum Center				
Spectrum Tool (SXXI, Coalition Joint Spectrum Management Planning Tool (CJSMPT), JSDR) Version Releases	3	2017	4	2028
JOERAD Releases	3	2017	4	2028
Emerging Spectrum Technology Research Projects	3	2017	4	2028
Spectrum Data Sharing Capability Deployments	3	2017	4	2028
E3 Program Outputs	1	2017	4	2028
EMBM SA Capability	2	2020	4	2028