Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Defense Information Systems Agency

R-1 Program Element (Number/Name)

0400: Research, Development, Test & Evaluation, Defense-Wide I BA 7:

PE 0303153K I Defense Spectrum Organization

Date: March 2014

Operational Systems Development

Appropriation/Budget Activity

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO [#]	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	117.399	13.209	7.681	13.423	-	13.423	21.412	18.022	13.044	13.367	Continuing	Continuing
JS1: Joint Spectrum Center	117.399	13.209	7.681	13.423	-	13.423	21.412	18.022	13.044	13.367	Continuing	Continuing

[#] The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Defense Spectrum Organization (DSO) provides a full array of electromagnetic spectrum services and capabilities, ranging from short notice on-the-ground operational support at the forward edge, to long range planning in pursuit of national strategic objectives. These services/capabilities are in direct support of Combatant Commanders, the Department of Defense (DoD) Chief Information Officer, Military Services, and Defense Agencies. The DSO is the focal point for electromagnetic spectrum analysis and the development of integrated spectrum plans and strategies to address current and future needs for DoD spectrum access. In addition, DSO serves as DoD's spectrum advocate at national and international forums and conducts extensive outreach to both industry and government. DSO also implements enterprise spectrum management capabilities to enhance spectrum efficiency and agility to improve spectrum-dependent capabilities in support of United States and Coalition operations. This includes acquiring, implementing and sustaining the Global Electromagnetic Spectrum Information System (GEMSIS) which provides an integrated catalog of joint net-centric spectrum management tools and services. Electromagnetic Spectrum Management enables information dominance through effective spectrum operations.

B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	24.278	7.741	26.309	-	26.309
Current President's Budget	13.209	7.681	13.423	-	13.423
Total Adjustments	-11.069	-0.060	-12.886	-	-12.886
 Congressional General Reductions 	-	-			
 Congressional Directed Reductions 	-	-			
 Congressional Rescissions 	-	-			
 Congressional Adds 	-	-			
 Congressional Directed Transfers 	-	-			
Reprogrammings	-	-			
SBIR/STTR Transfer	-	-			
Other Adjustment	-11.069	-0.060	-12.886	-	-12.886

Change Summary Explanation

The FY 2013 decrease of -\$11.069 was due to Budget Control Act (BCA) reductions which caused efforts to improve spectrum data quality and completeness to be reduced.

The FY 2014 decrease of -\$0.060 is due to contract efficiency reductions realized within developing enterprise spectrum capabilities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Defense Information	ation Systems Agency	Date: March 2014							
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 7: Operational Systems Development R-1 Program Element (Number/Name) PE 0303153K / Defense Spectrum Organization									
The FY 2015 decrease of -\$12.886 will result in delays in integrating spectrum capabilities within GEMSIS, military standard reviews and updates, transitioning emerging technologies to programs of record, and developing enterprise spectrum capabilities.									

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Information Systems Agency										Date: March 2014		
0400 / 7 PE 03					•				Project (Number/Name) JS1 / Joint Spectrum Center			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO [#]	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
JS1: Joint Spectrum Center	117.399	13.209	7.681	13.423	-	13.423	21.412	18.022	13.044	13.367	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

^{*} The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Joint Spectrum Center (JSC), which is a division of DSO, designs, develops, and maintains Department of Defense (DoD) automated spectrum management systems, evaluation tools, and databases. The databases are the prime sources of information for DoD use of the Electromagnetic (EM) spectrum. The JSC provides technical measurement and analysis in support of DoD spectrum policy decisions to ensure the development, acquisition, and operational deployment of systems are compatible with other spectrum dependent systems operating within the same EM environment. Additional efforts focus on improving future warfighter EM spectrum utilization through technological innovation, and influencing research and development emerging technology efforts.

Improved spectrum support includes the Global Electromagnetic Spectrum Information System (GEMSIS), a net centric capability that will provide commanders with an increased common picture of spectrum situational awareness of friendly and hostile forces while transparently deconflicting competing mission requirements for spectrum use. This capability will enable the transformation from the current preplanned and static assignment strategy into autonomous and adaptive spectrum operations.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 20	013	FY 2014	FY 2015
Title: Joint Spectrum Data Repository and Tools	2	2.148	3.257	6.974
Description: The Joint Spectrum Data Repository and Tools program supports developed tools, spectrum modeling and simulation capabilities, spectrum database development and standardization. This program provides the Combatant Commands (COCOMs) are management tools and associated databases to manage spectrum resources at the support tools to conduct Electromagnet Spectrum Supportability Risk Assessments (SSRA).	t, and spectrum data transformation and Military Services with the spectrum arategic and operational level. It also			
FY 2013 Accomplishments: Enhanced DoD spectrum data sharing services by implementing additional regulatory enhancements and improved workflow for data capture. Developed Spectrum XXI On spectrum management operations and deployment and initiated development of SXXI requirements and enhancements. Improvements to the spectrum supportability risk a	ine (SXXIO) v2.2 to support domestic-based O v2.3 to address additional user-defined			

UNCLASSIFIED								
Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Information Systems Agency Date: March 2014								
Appropriation/Budget Activity 0400 / 7	• `	Project (Number/Name) IS1 I Joint Spectrum Center						
B. Accomplishments/Planned Programs (\$ in Millions)		FY 20	13 FY 2014	FY 2015				
to the scenario editing capability, "Wizards", to assist novice users connecting to the Secure Internet Protocol Router Network (SIPRN		у						
FY 2014 Plans: Enhance the Joint Spectrum Data Repository (JSDR) by developing to address all frequency assignment files currently hosted by the Discretized router network (NIPRNet) version of the JSDR at a Defense Entergon SXXIO v2.3. Enhance the automated data sharing capabilities (Stange Standard based on refined requirements (COIs). Initiate development of Spectrum Relocation/Requirements spectrum supportability risk assessment tool include additional "Wich connecting to the SIPRNet. Development and information assurant The increase of +\$1.109 from FY 2013 to FY 2014 is attributed to maintain synchronicity with the National Telecommunications & Information."	DSO. Implement an unclassified but sensitive internet proprise Computing Center (DECC). Initiate development of epstone and Joint Data Access Web Server (JDAWS)) an generated through the activities of data Communities Of Its Analysis Capability (SRRAC) v2.0. Improvements to the dizards for novice users, and enabling secure remote accence activities enable deploying the Mass Relocation Tool.	d the interest seess by						
FY 2015 Plans: Will focus on fielding SXXIO Full Operational Capability (FOC), ho assessment tool on SIPRNet, and further developing capabilities to and joint operational level to include coordination and integration v (JEMSO) capabilities. DSO will deploy the enhanced JSDR Initial Center (ESC). This new version of the JSDR software will implem capability, Universal query and Federated data capabilities, as well DSO customers.	o support situational awareness of spectrum use at the standard with evolving Joint Electromagnetic Spectrum Operations Operational Capability (IOC) at a DISA Enterprise Service and a new data exchange format, data quality assessment	rategic e t						
Will focus on fielding SXXIO Full Operational Capability (FOC), ho assessment tool on SIPRNet, and further developing capabilities to and joint operational level to include coordination and integration of (JEMSO) capabilities. DSO will deploy the enhanced JSDR Initial Center (ESC). This new version of the JSDR software will implem capability, Universal query and Federated data capabilities, as well DSO customers.	o support situational awareness of spectrum use at the standard with evolving Joint Electromagnetic Spectrum Operations Operational Capability (IOC) at a DISA Enterprise Service and a new data exchange format, data quality assessment	rategic e t						

	UNCLASSIFIED					
Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense In	nformation Systems Agency		Date: M	arch 2014		
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 2013	FY 2014	FY 2015	
The increase of +\$3.717 from FY 2014 to FY 2015 will allow depled evelopment and fielding of a cross domain solution for the new sequelopment of SXXIO features through FY2015 that will support processes, and support the eventual sunset of legacy SXXI. The	spectrum data standard. This increase will enable continue the full range of spectrum assignment and coordination					
<i>Title:</i> DoD Electromagnetic Environmental Effects (E3) Program			2.919	1.323	1.397	
Description: The DoD E3 Program supports the Joint Capabilities the DoD acquisition process to ensure that E3 control and spectruand procurement of information technology and National Security of the Joint Ordnance E3 Risk Assessment Database (JOERAD) (HERO) electromagnetic environmental effects surveys in support algorithms and provides analytical capabilities to perform real-time identify equipment limitations in the operational Electromagnetic (decisions about the hazards associated with the use of ordnance program managers and materiel developers on all programs that a equipment per DoDI 4650.1. These assessments encompassed real associated risks.	um supportability are incorporated into the development, to Systems. The E3 Program also supports the development and Hazards of Electromagnetic Radiation to Ordnance to fithe COCOMs and Joint Task Forces. JOERAD developerisk assessments to evaluate platform/system safety and EM) environment. JOERAD enables operators to make criwithin complex EM environments. A SSRA is performed by are acquiring or incorporating spectrum-dependent system.	esting, t ps d itical by				
FY 2013 Accomplishments: Resources supported ordnance susceptibility data collection and operforming forward deployed HERO surveys. Conducted CONUS and updated the DoD ordnance radio frequency (RF) safety requiacquisition documents and executed approximately 400 critical remains and executed approximately 400 critica	base emitter surveys for ordnance safety database valida rements. Conducted critical reviews of approximately 400	ition				
FY 2014 Plans: Conduct four HERO surveys for forward deployed bases and critic DoD acquisition, research and analysis efforts. Conduct quality a		orting				
The decrease of -\$1.596 from FY 2013 to FY 2014 is due to delay	ys of military standard reviews and updates.					
FY 2015 Plans: Future planned efforts will initiate conversion of the JOERAD to a Commanders Group (JOCG) HERO Subgroup meetings and suppresseptibility data records and perform quality data inspections for forward HERO surveys for the COCOMs/Services. Will conduct to	port the JOCG Executive Committee. Will develop ordnander use in ordnance deconfliction. Will conduct up to eight					

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defens	se Information Systems Agency		Date: M	larch 2014	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0303153K I Defense Spectrum Organization	Project (Number/Name) JS1 / Joint Spectrum Center			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2013	FY 2014	FY 2015
validation and update the DoD ordnance radio frequency (RF) Environment (EME) Profiles to address blue force jammer env behalf of OSD in support of system acquisitions. Will review a documents assigned by the Joint Staff and DoD CIO.	rironment. Will continue to implement the DoD E3 Program or				
The increase of +\$0.074 from FY 2014 to FY 2015 will enable support the JOCG Executive Committee, develop additional or inspection for use in ordnance deconfliction. In addition, will p management and systems engineering curriculum and fully su	rdnance susceptibility data records, and perform quality data provide spectrum and E3 training modules for DAU program	illy			
Title: Emerging Spectrum Technologies (EST)			3.401	1.315	1.59
Description: DSO has the responsibility to investigate emergi to improve future warfighter EM spectrum utilization through te the opportunities and risks associated with emerging spectrum development, influence and lead technology development in o spectrum policies incorporate optimal technology to meet DoD on Dynamic Spectrum Access (DSA). DSA is realized through wireless devices to dynamically adapt their spectrum access a propagation environment, and application performance require	echnological innovation. The goal of the EST program is to ide n-related technologies in the early stages of the technology order to maximize DoD spectrum utilization, and ensure that no mission requirements. Within EST there is an increased focu- tivity wireless networking architectures and technologies that enable according to criteria such as policy constraints, spectrum available.	entify us ble			
FY 2013 Accomplishments: Identified technology applications and associated transition initiand contested environments and developed requirements for a spectrum access through use of ESTs. Evaluated the implication developed recommendations for change to promote the use of paradigms.	advanced spectrum management-related capabilities to optim ions of EST on existing policy and regulatory paradigms and				
FY 2014 Plans: Efforts focus on supporting the Defense Enterprise Spectrum 5	Strategy, to include develop enabling concepts, processes,	ing			

	UNCLASSIFIED				
Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Inform	nation Systems Agency		Date: M	arch 2014	
Appropriation/Budget Activity 0400 / 7		Project (Number/Name) JS1 / Joint Spectrum Center			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2013	FY 2014	FY 2015
The decrease of -\$2.086 from FY 2013 to FY 2014 reflects the delay in and the delay in developing enterprise spectrum capabilities to support		ecord			
FY 2015 Plans: Efforts will focus on maturing the enabling concepts, processes, stand promising sharing methods to meet DoD's growing spectrum requirem policy/regulatory, and technology oriented stakeholders will be conducted.	nents. Coordination and collaboration with operational				
The increase of $+$ \$0.281 from FY 2014 to FY 2015 will enable initial ef spectrum sharing capabilities with stakeholders. This will be accomplished		on of			
Title: Spectrum Data Sharing Capability			0.962	-	-
Description: The spectrum data enhancement is responsible for devergent Central Command's Joint Urgent Operational Need (JUON) 06-53745 enhancement will provide accurate data for automated Counter Radio calculation; enable automated data capture; automate data access calculation and enable interoperability with North Atlantic Treatment.	201-00, Radio Frequency Spectrum Management. This Electronic Warfare deconfliction and spectrum inventor pabilities; provide business process engines of oversigns.	ory			
FY 2013 Accomplishments: Improved Stepstone through enhancements to the editor, enhanceme capabilities, and implementing additional regulatory compliance check database products. The JSC Data Access Web Server (JDAWS) tool leveraged additional DoD and Federal spectrum database sources. The evolve, adding new spectrum data sharing elements of interest to the	s and data quality enhancements across all DSO specimplemented enhanced query capabilities, as well as ne DoD and NATO spectrum data standard continued	ctrum			
FY 2014 Plans: The Spectrum Data Sharing Capability project ends in FY 2013 and the	nere are no requirements for FY 2014.				
The decrease of -\$0.962 from FY 2013 to FY 2014 is due to planned of	completion of this specific project.				
Title: Global Electromagnetic Spectrum Information System (GEMSIS	5)		3.779	1.786	3.45
Description: The Global Electromagnetic Spectrum Information System operational commanders with an increased common picture of spectrum transparently deconflicting competing mission requirements for spectrum the current preplanned and static assignment strategy into autonomous	um situational awareness of friendly and hostile forces um use. This capability will enable the transformation	while			

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0303153K / Defense Spectrum Organization	_	ct (Number/ Joint Spectru	•	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015	
FY 2013 Accomplishments: Increment two implemented capabilities which included an improassignment and spectrum management tools, and access to we Program (AESOP).	• • • • • • • • • • • • • • • • • • • •	ations			
FY 2014 Plans: Increment two implements and deploys the Integrated Spectrum frequency assignment and spectrum management tools and well		roved			
The decrease of -\$1.993 from FY 2013 to FY 2014 is due to dec	reased contractor support for FY2014.				
FY 2015 Plans: Will improve/enhance user interface and deliver the Spectrum da Integration efforts will include implementation of SXXIO v2.3, Ste	•	lities.			
The increase of +\$1.670 from FY 2014 to FY 2015 will enable ful dashboard.	orther development of user interfaces and the Spectrum				

C. Other Program Funding Summary (\$ in Millions)

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Information Systems Agency

			FY 2015	FY 2015	FY 2015					Cost To	
<u>Line Item</u>	FY 2013	FY 2014	Base	<u>000</u>	<u>Total</u>	FY 2016	FY 2017	FY 2018	FY 2019	Complete Total	Cost
 O&M, DW/PE 	38.071	37.133	35.192	-	35.192	35.366	35.461	38.517	37.881	Continuing Conti	nuing
OCCUPATOR OCH DIA											

Accomplishments/Planned Programs Subtotals

0303153K: O&M, DW

Annuanciation/Dudant Activity

Remarks

D. Acquisition Strategy

Engineering support services are provided by the use of a contract. No in-house government capability exists, nor is it practical to develop one that can provide the expertise necessary to fulfill the mission and responsibilities of DSO. Full and open competition was used for the current contract with EXELIS, Inc. GEMSIS' acquisition approach is to obtain capabilities by adopting existing capabilities, buying commercial products, or developing new capabilities by delivering incrementally within the context of a streamlined and adaptive acquisition approach.

E. Performance Metrics

1. Formal Earned Value Measurement System (EVMS) measures will be applied to large software development efforts

PE 0303153K: *Defense Spectrum Organization* Defense Information Systems Agency

R-1 Line #203

Date: March 2014

7.681

13.423

13.209

Due is at (Neurole au/Nausa)

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Information Sy	Date: March 2014			
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0303153K I Defense Spectrum Organization	Project (Number/Name) JS1 / Joint Spectrum Center		
 100% On-time software version releases – met goal in FY 2013 95% Software development PCRs closed on schedule – exceeded goal in I 100% On-time deployments to users – met goal in FY 2013 90% Percent Spectrum Data System Availability – exceeded goal in FY 20 				

Exhibit R-3, RDT&E	Project C	ost Analysis: PB 2	U15 Dete	nse intor	mation Sy	ystems A	gency		Date:	Date: March 2014							
Appropriation/Budg 0400 / 7				ogram Ele 3153K / D zation		_	(Number	•	er								
Support (\$ in Millions)				FY 2	2013	FY 2	2014		2015 ise	FY 2		FY 2015 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	Total Cost	Target Value of Contrac		
Technical Engineering Services 1	C/CPIF	EXELIS, Inc. : Herndon, VA	106.886	11.456	Oct 2012	5.928	Oct 2013	12.070	Oct 2014	-		12.070	Continuing	Continuing	Continuir		
Technical Engineering Services 2	MIPR	Various : Various	2.850	0.355	Oct 2012	0.355	Oct 2013	0.355	Oct 2014	-		0.355	Continuing	Continuing	Continuir		
		Subtotal	109.736	11.811		6.283		12.425		-		12.425	-	-	-		
Test and Evaluation (\$ in Millions)				FY 2	2013	FY :	FY 2014		FY 2015 Base		015 CO	FY 2015 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	Total Cost	Target Value of Contract		
Test & Evaluation	MIPR	JTIC : Ft. Huachuca	1.512	0.400	Oct 2012	0.400	Oct 2013	-		-		-	-	2.312	2.31		
		Subtotal	1.512	0.400		0.400		-		-		-	-	2.312	2.31		
Management Services (\$ in Millions)				FY 2	2013	FY 2015 FY 2015 FY 2014 Base OCO					FY 2015 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	Total Cost	Target Value of Contrac		
Management Services	FFRDC	MITRE : Ft. Monmouth, NJ	6.151	0.998	Oct 2012	0.998	Oct 2013	0.998	Oct 2014	-		0.998	Continuing	Continuing	Continuir		
		Subtotal	6.151	0.998		0.998		0.998		-		0.998	-	-	-		
			Prior Years	FY 2013		FY:	2014		2015 Ise	FY 2		FY 2015 Total	Cost To	Total Cost	Target Value of Contrac		
		Project Cost Totals	117.399	13.209		7.681		13.423		-		13.423	_	_	_		

PE 0303153K: *Defense Spectrum Organization* Defense Information Systems Agency

UNCLASSIFIED
Page 10 of 12

R-1 Line #203

ppropriation/Budget Activity 00 / 7							R-1 Program Element (Number/Nan PE 0303153K / Defense Spectrum Organization									, , ,													
	F	Y 2	2013			FY	2014			FY 2	2015			FY	20	16		F	Y 2	017			FY	201	8		FY	201	9
	H	2	3	4	1	2	3	4	1	2	3	4	1	2	Ţ;	3	4	1	2	3	4	1	2	_	_	1	2	3	Ī
Spectrum XXI Online (SXXIO) Fielding																													
SXXIO Version Releases																													
Joint Ordnance E3 Risk Assessment Database (JOERAD) Version 10.0 Deployment																													
Dynamic Spectrum Access (DSA) Research Projects																													_
Spectrum Data Sharing Capability Deployments																													_
GEMSIS Host Nation Spectrum Worldwide Database Online (HNSWDO) Version 3.1.5 Fielding																													
GEMSIS Coalition Joint Spectrum Management Planning Tool (CJSMPT) Version 2.1.2 Deployment																													_
Increment Two GEMSIS Event																													_

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Defense Information System	ms Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0303153K I Defense Spectrum Organization	- 3 (umber/Name) Spectrum Center

Schedule Details

	St	art	E	nd
Events	Quarter	Year	Quarter	Year
Spectrum XXI Online (SXXIO) Fielding	4	2013	4	2014
SXXIO Version Releases	4	2013	4	2016
Joint Ordnance E3 Risk Assessment Database (JOERAD) Version 10.0 Deployment	2	2013	4	2016
Dynamic Spectrum Access (DSA) Research Projects	4	2013	4	2016
Spectrum Data Sharing Capability Deployments	4	2013	4	2016
GEMSIS Host Nation Spectrum Worldwide Database Online (HNSWDO) Version 3.1.5 Fielding	4	2013	4	2014
GEMSIS Coalition Joint Spectrum Management Planning Tool (CJSMPT) Version 2.1.2 Deployment	3	2013	4	2014
Increment Two GEMSIS Event	1	2013	4	2016