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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0305179A / <i>Integrated Broadcast Service (IBS)</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	0.382	5.430	9.926	-	9.926	9.655	5.951	1.745	1.762	0.000	34.851
EF4: <i>Integrated Broadcast System</i>	-	0.382	5.430	9.926	-	9.926	9.655	5.951	1.745	1.762	0.000	34.851

A. Mission Description and Budget Item Justification

The Joint Program Office (JPO) for Integrated Broadcast Service (IBS) Terminals supports the Joint Services and the Special Operations Command (SOCOM). The JPO is responsible for coordinating modernization and sustainment of IBS terminals compatible with the UHF SATCOM IBS broadcasts in support of Air and Missile Defense, Long Range Precision Fires, Soldier Lethality, and Network Command, Control, Communications and Intelligence Cross Functional Teams and Tactical Intelligence Targeting Access Node. The IBS transmits worldwide time-sensitive tactical and strategic intelligence and targeting data to all echelons of Joint Service operational users. The Joint Tactical Terminal (JTT) is the official IBS system and ensures continued IBS interoperability to a variety of tactical producers and consumers across the Joint Services. The transmit/receive-capable JTT systems currently consist of the JTT-Senior and JTT-IBS configurations. The JPO is executing updates to the JTT terminal to incorporate Mobile User Objective System-Wideband Code Division Multiple Access (WCDMA) elements based on modernization requirements.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.382	5.430	0.000	-	0.000
Current President's Budget	0.382	5.430	9.926	-	9.926
Total Adjustments	0.000	0.000	9.926	-	9.926
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	9.926	-	9.926

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0305179A / <i>Integrated Broadcast Service (IBS)</i>				Project (Number/Name) EF4 / <i>Integrated Broadcast System</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
EF4: <i>Integrated Broadcast System</i>	-	0.382	5.430	9.926	-	9.926	9.655	5.951	1.745	1.762	0.000	34.851
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Program Office (JPO) for Integrated Broadcast Service (IBS) Terminals supports the Joint Services and the Special Operations Command (SOCOM). The JPO is responsible for coordinating modernization and sustainment of IBS terminals compatible with the UHF SATCOM IBS broadcasts in support of Air and Missile Defense, Long Range Precision Fires, Soldier Lethality, and Network Command, Control, Communications and Intelligence Cross Functional Teams and Tactical Intelligence Targeting Access Node. The IBS transmits worldwide time-sensitive tactical and strategic intelligence and targeting data to all echelons of Joint Service operational users. The Joint Tactical Terminal (JTT) is the official IBS system and ensures continued IBS interoperability to a variety of tactical producers and consumers across the Joint Services. The transmit/receive-capable JTT systems currently consist of the JTT-Senior and JTT-IBS configurations. The JPO is executing updates to JTT systems to incorporate Mobile User Objective System-Wideband Code Division Multiple Access (WCDMA) based on modernization requirements. The IBS network uses Type-1 encryption, Common Interactive Broadcast (CIB), and Common Message Format (CMF).

FY 2023 RDTE Dollars in the amount of \$9.926M will be used for Vendor terminal software development and porting, vendor testing and evaluation, independent testing, integration and certification by government and contracting agencies (JITC, NSA, Navy, General Dynamics) in support of IBS and MUOS modernization efforts.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Support Costs and Management Services	0.382	0.500	2.501
Description: Engineering and Testing support			
FY 2022 Plans: Will continue testing support.			
FY 2023 Plans: Will continue engineering and testing support to obtain operational certification from external agencies to include JITC, Navy SSC PAC and General Dynamics			
FY 2022 to FY 2023 Increase/Decrease Statement: Increased engineering support for modernization and migration to WCDMA. Program will start more expansive and extensive test efforts to support modernization.			
Title: Modernization Efforts	-	4.930	7.425

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<p>Description: Joint Tactical Terminal (JTT) and Integrated Broadcast Services (IBS) modernization efforts.'</p> <p>FY 2022 Plans: Funds are required to initiate Joint Tactical Terminal (JTT) and Integrated Broadcast Services (IBS) modernization efforts.</p> <p>FY 2023 Plans: Funds are required to continue Joint Tactical Terminal (JTT) and Integrated Broadcast Services (IBS) modernization efforts to include design reviews, MUOS SW development and porting, SW prototyping, integration and testing, SW configuration management, IBS-LEO/IBS-Alt path upgrades and support to MUOS testing, MIL-STD compliance & certification.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase in technical requirements, documentation, and software development efforts to modernize IBS architecture with WCDMA architecture.</p>			
Accomplishments/Planned Programs Subtotals	0.382	5.430	9.926

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• V29600: <i>JTT/CIBS-M</i>	5.304	5.463	2.352	-	2.352	0.509	0.508	0.510	0.509	0.000	15.155

Remarks
FY 2023 funds continue support of the modernized JTT acquisition as well as the IBS/WCDMA modernization efforts.

D. Acquisition Strategy
The Integrated Broadcast Service (IBS) was designed to consolidate legacy broadcasts into an interoperable set of broadcasts that can carry threat warning and situational data to both users and producers. The requirement for IBS is documented in the Integrated SIGINT Information Mission Needs Statement (MNS) validated by the Joint Requirements Oversight Council (JROC) Memo (JROCM) 115-95 on 15 September 1995. The JTT program is an effort to provide common tactical terminals capable of receiving and transmitting into the IBS UHF broadcasts. The House Permanent Select Committee for Intelligence (HPSCI) requested an IBS Implementation Plan, which was approved by the Assistant Secretary for Defense for Command, Control, Communications and Intelligence (ASD/C3I) (ref (i)) on 24 October 1995. The JTT was included as part of the solution in the Implementation Plan. The JTT program Operational Requirements Document (ORD) was signed on 24 September 1996. Subsequent updates in March 2005 and November 2017 were made to reflect changes in interoperability/Net Readiness certifications and Post Milestone C enhancements respectively. Additional fact of life administrative changes were made and the updated ORD was signed on 25 April 2018. The JTT is integrated into platforms that have a requirement to interact (transmit and/or receive) with the IBS Common Interactive Broadcast (CIB). The legacy IBS Terminals will reach sustainment end-of-life in FY2027. The award of a post-Milestone C contract was completed to replace the end-of-life systems, leverage updated technology, and

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enable flexible configurations to meet Joint customer operational needs. To support IBS architecture modernization efforts, the Next generation JTT will incorporate MUOS and needed IBS upgrades into the software baseline in order to keep pace with evolving SATCOM requirements, IBS operational needs, and obsolescence.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army **Date:** April 2022

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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
User Support	MIPR	ICOE : Fort Huachuca, AZ	0.046	-		-		-		-		-	0.000	0.046	-
Project Management Support	Allot	PM IS&A : APG, MD; Fort Huachuca, AZ	0.075	-		-		0.575	Nov 2022	-		0.575	0.000	0.650	-
FY 2018 NDAA SEC 825 MDAP Cost Overrun	Allot	PM DCGS-A : APG, MD	0.002	-		-		-		-		-	0.000	0.002	-
Subtotal			0.123	-		-		0.575		-		0.575	0.000	0.698	N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IBS Modernization	MIPR	TBD : DRS; Dayton, OH	0.448	-		4.930	Jan 2022	7.425	Feb 2023	-		7.425	0.000	12.803	-
Integration and Testing of JTT fleet Modernization	MIPR	JITC : Fort Huachuca, AZ; APG, MD, SSC PAC, GD-Scottsdale	1.088	0.382	Jun 2021	0.500	Jun 2022	1.926	Jan 2023	-		1.926	0.000	3.896	-
Subtotal			1.536	0.382		5.430		9.351		-		9.351	0.000	16.699	N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.659	0.382	5.430	9.926	-	9.926	0.000	17.397	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Next Generation IBS Terminals Integration and Test	[Blue bar spanning FY 2021 Q1 to FY 2025 Q4]																											
Next Gen: JITC Testing and Certification	[Grey bar spanning FY 2021 Q1 to FY 2022 Q4]																											
IBS Modernization Development	[Blue bar spanning FY 2023 Q1 to FY 2025 Q4]																											
IBS Modernization Contract Award	[Blue triangle '1' at FY 2022 Q4]																											
IBS Modernization Testing and Certification	[Blue bar spanning FY 2023 Q1 to FY 2025 Q4]																											
Modernization SW Block Delivery	[Blue triangle '3' at FY 2025 Q3]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Next Generation IBS Terminals Integration and Test	2	2020	4	2025
Next Gen: JITC Testing and Certification	1	2023	1	2023
IBS Modernization Development	4	2022	4	2025
IBS Modernization Contract Award	4	2022	4	2022
IBS Modernization Testing and Certification	1	2023	4	2025
Modernization SW Block Delivery	4	2025	4	2025