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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 0305179F / <i>Integrated Broadcast Service (IBS)</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	-	14.123	21.588	16.006	0.000	16.006	19.289	19.682	20.395	20.798	Continuing	Continuing
674779: <i>Integrated Broadcast Service (IBS)</i>	-	14.123	21.588	16.006	0.000	16.006	19.289	19.682	20.395	20.798	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Integrated Broadcast Service (IBS) Broadcast fulfills the warfighter's requirements for worldwide threat warning and situational awareness information with timely production and simultaneous dissemination of Intelligence, Surveillance, and Reconnaissance (ISR) derived combat information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined in near real time by strategic, operational and tactical sensors.

IBS Broadcast Baseline is comprised of the following:

- IBS Over the Air (OTA) includes a Common Interactive Broadcast (CIB) on UHF (Ultra High Frequency) satellite channel using a Common Message Format (CMF), a Military Standard (MIL-STD) common waveform, a Tactical Data Processor (TDP) to filter and display messages and data, and CMF analysis tools and an IBS-alternate path via mission partner provided satellite communications (SATCOM).
- IBS Network Services (IBS NS) includes two Global IBS Network Servers (GINS) and four Theater Interface Nodes (TINs) to support the geographic Combatant Commanders (COCOMs)
 - Two GINS receive data from each theater and integrate this data into a worldwide picture available to all network/broadcast users.
 - Four regional TINs allow local and out-of-theater users (not directly receiving IBS OTA broadcast) to still obtain access to the data disseminated over the IBS OTA broadcast. Additionally, the TIN will receive and inject data into the CIB for consumers without access to the theater CIB.

This PE funds the modernization of and/or enhancements to IBS OTA and IBS NS to include performing development and testing to ensure adequate integration with tactical terminals.

IBS is a critical data information provider supporting Joint All Domain Command and Control (JADC2) and the emerging requirements for Advanced Battle Management System (ABMS) information exchange requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.056M was expended for civilian pay expenses in this program element, and in FY24 \$0.453M is forecasted for civilian pay expenses in this program element.

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The FY25 funding request was reduced by \$2.859 million to account for the availability of prior year execution balances.

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	14.123	21.588	18.865	0.000	18.865
Current President's Budget	14.123	21.588	16.006	0.000	16.006
Total Adjustments	0.000	0.000	-2.859	0.000	-2.859
• 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	-2.859	0.000	-2.859

Change Summary Explanation

The FY25 funding request was reduced by \$2.859 million to account for the availability of prior year execution balances.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
Title: IBS Over the Air (OTA) Modernization	4.675	6.580	3.928
Description: Develops/tests/supports Primary, Alternate, Contingency, and Emergency (PACE) broadcast communications pathways			
FY 2024 Plans:			
- Continues to develop and demonstrate IBS over Mobile User Objective System (MUOS) Wideband Code Division Multiple Access (WCDMA)			
- Continues to develop and demonstrates common waveform architecture for IBS-Alt Path and IBS-L			
- Performs cryptographic modernization of IBS-Alt Path			
- Develops IBS Command and Control (C2) capability			
- Develops tools to allow automated planning for active producers on the WCDMA broadcast			
FY 2025 Plans:			
- Will continue to develop and demonstrate IBS over MUOS WCDMA			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<ul style="list-style-type: none"> - Will continue to demonstrate and begin fielding common waveform architecture for IBS-Alt Path and IBS-L - Will complete cryptographic modernization of IBS-Alt Path - Will continue to develop IBS Command and Control (C2) capability - Will continue developing tools to allow automated planning for active producers on the WCDMA broadcast <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding decreased due to completion of IBS-Alt Path Crypto Modernization development and in part to account for the availability of prior year execution balances.</p>				
<p>Title: IBS Over the Air (OTA) Baseline Enhancement</p> <p>Description: Develops/tests/supports enhancements to existing Baseline OTA capabilities</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continues enhancement of enterprise TDP - Continues enhancement of Common Message Format Analysis Tool (CMF-AT) - Continues enhancement of uplink sites to handle operational surge increases - Continues to investigate and implement IBS architecture CMF parser library update to support increased IBS volumetric message traffic - Completes development and partial fielding of monitoring and control tools (Downlink Monitoring Element (DME)) to assist in assured dissemination tasks at COCOM uplink watch sites - Continues to upgrade the CIB Planning Tool to allow automated planning to occur for active producers <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> - Will complete enterprise TDP enhancement - Will continue enhancement Common Message Format Analysis Tool (CMF-AT) - Will continue enhancement of uplink sites to handle operational surge increases - Will complete implementation of IBS architecture CMF parser library update requirements to support increased IBS volumetric message traffic - Will continue fielding of monitoring and control tools (Downlink Monitoring Element (DME)) to assist in assured dissemination tasks at COCOM uplink watch sites - Will continue to upgrade the CIB Planning Tool to allow automated planning to occur for active producers <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding decreased due to completion of TDP and DME enhancement initiatives.</p>		1.006	3.076	0.603
<p>Title: IBS Network Services Modernization</p>		0.926	4.070	4.388

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>Description: Develops/tests/supports modernization of IBS NS enabling increased throughput, timeliness, and portability of critical intelligence data</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Refactors software to enable Legacy IBS Network transition to cloud architecture - Continues to investigate AI/ML capabilities for incorporating into IBS Enterprise <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> - Will continue to refactor software to enable Legacy IBS Network transition to cloud architecture - Will continue to investigate AI/ML capabilities for incorporating into IBS Enterprise <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to inflation and transition of software refactorization efforts from development to preliminary integration and test.</p>				
<p>Title: IBS Network Services Baseline Enhancements</p> <p>Description: Develops/tests/supports enhancements to existing Baseline NS capabilities</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continues to upgrade the IBS-NS capability at the CCMDs to allow automated planning to occur for active producers - Continues to upgrade volumetric increase to provide ten times performance enhancement to throughput, storage and replay to address message volume; this will increase the Enterprise output - Continues to upgrade the IBS Enterprise-level real-time and analytic views on Global and CCMDs watch floors; further integrate uplink sites with associated TIN by reducing equipment overhead and streamlining data flows - Continues to upgrade and transition current classified dissemination path to new architecture and enable SCI-level dissemination of IBS data <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> - Will continue to upgrade the IBS-NS capability at the CCMDs to allow automated planning to occur for active producers - Will continue to upgrade volumetric increase to provide ten times performance enhancement to throughput, storage and replay to address message volume; this will increase the Enterprise output - Will continue to upgrade the IBS Enterprise-level real-time and analytic views on Global and CCMDs watch floors; further integrate uplink sites with associated TIN by reducing equipment overhead and streamlining data flows 		3.165	2.010	0.250

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
- Will continue to upgrade and transition current classified dissemination path to new architecture and enable SCI-level dissemination of IBS data FY 2024 to FY 2025 Increase/Decrease Statement: Funding decreased to account for the availability of prior year execution balances.				
Title: IBS Enterprise Support Description: IBS enterprise Systems Engineering and Integration and engineering expertise FY 2024 Plans: - Continues to perform Enterprise Systems Engineering and CMF/CIB Integration - Continues to perform exploratory studies and demonstrations for alternate broadcast dissemination pathways and advanced broadcast capabilities - Continues providing engineering expertise for IBS integration into a proliferated-Low Earth Orbit (p-LEO) constellation as a future alternate dissemination path - Continues to refine additional IS-CDD initiatives into technical requirements for acquisition strategy approval and contract award(s) - Completes enterprise and commercial cloud services market study and assists IBS enterprise in formulating cloud transition strategy FY 2025 Plans: - Will continue to perform Enterprise Systems Engineering and CMF/CIB Integration - Will continue to perform exploratory studies and demonstrations for alternate broadcast dissemination pathways and advanced broadcast capabilities - Will continue providing engineering expertise for IBS integration into a proliferate-Low Earth Orbit (p-LEO) constellation as a future alternate dissemination path - Will continue to refine additional IS-CDD initiatives into technical requirements for acquisition strategy approval and contract award(s). - Will continue to advise IBS enterprise on cloud transition strategy and implementation FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to inflation and to meet increased Systems Engineering and Integration and engineering expertise requirements.		3.961	4.687	5.614
Title: Test & Evaluation Description: Test & Evaluation of the IBS System		0.390	1.165	1.223

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: - Performs Test and Evaluation activities of the IBS OTA and IBS NS systems/sub-systems components FY 2025 Plans: - Will perform Test and Evaluation activities of the IBS OTA and IBS NS systems/sub-systems components FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to inflation.			
Accomplishments/Planned Programs Subtotals	14.123	21.588	16.006

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

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPAF 03 832070: <i>Intelligence Comm Equipment</i>	2.848	11.568	12.041	-	12.041	9.092	9.431	9.632	9.822	Continuing	Continuing

Remarks

E. Acquisition Strategy
 IBS acquisition leverages three existing sole source, single award, IDIQ contracts to modernize or enhance the IBS Broadcast.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0305179F / Integrated Broadcast Service (IBS)				674779 / Integrated Broadcast Service (IBS)							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 Complete	Total Cost	Target Value of Contract
IBS OTA Modernization	Various	OGA/Various : Multiple	-	4.675	Dec 2022	6.580	Dec 2023	3.928	Dec 2024	-		3.928	Continuing	Continuing	-
IBS OTA Baseline Enhancements	Various	OGA/MEG/L3 : Multiple	-	1.006	Dec 2022	3.076	Dec 2023	0.603	Dec 2024	-		0.603	Continuing	Continuing	-
IBS NS Modernization	SS/ Various	CACI/GTRI : Multiple	-	0.926	Dec 2022	4.070	Dec 2023	4.388	Dec 2024	-		4.388	Continuing	Continuing	-
IBS NS Baseline Enhancements	SS/CPFF	CACI : Fairfax, VA	-	3.165	Dec 2022	2.010	Dec 2023	0.250	Dec 2024	-		0.250	Continuing	Continuing	-
Subtotal			-	9.772		15.736		9.169		-		9.169	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 Complete	Total Cost	Target Value of Contract
IBS Enterprise Support	SS/ Various	OGA/MEG/L3/GTRI : Multiple	-	3.599	Jan 2023	4.139	Jan 2024	5.053	Jan 2025	-		5.053	Continuing	Continuing	-
Subtotal			-	3.599		4.139		5.053		-		5.053	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 Complete	Total Cost	Target Value of Contract
Interoperability and Development Testing	MIPR	JITC : Ft Huachuca, AZ	-	0.390	Dec 2022	0.775	Dec 2023	0.814	Dec 2024	-		0.814	Continuing	Continuing	-
Responsible Test Organization (RTO)	PO	45th Test Sqn : Eglin AFB, FL	-	0.000	Dec 2022	0.390	Dec 2023	0.410	Dec 2024	-		0.410	Continuing	Continuing	-
Subtotal			-	0.390		1.165		1.224		-		1.224	Continuing	Continuing	N/A

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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 0305179F / <i>Integrated Broadcast Service (IBS)</i>	Project (Number/Name) 674779 / <i>Integrated Broadcast Service (IBS)</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

IBS	
OTA Modernization	
OTA Baseline Enhancements	
NS Modernization	
NS Baseline Enhancements	
IBS Enterprise Support	
Test and Evaluation	

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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
IBS				
OTA Modernization	1	2023	4	2029
OTA Baseline Enhancements	1	2023	4	2029
NS Modernization	1	2023	4	2029
NS Baseline Enhancements	1	2023	4	2029
IBS Enterprise Support	1	2023	4	2029
Test and Evaluation	1	2023	4	2029