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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

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 1203179F / <i>Integrated Broadcast Service (IBS)</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	9.887	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
674779: <i>Integrated Broadcast Service (IBS)</i>	-	9.887	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
 In FY2020, Integrated Broadcast Service PE1203179F effort transfer to PE0305179F due to realignment to Major Force Program for Intelligence and Communications.

A. Mission Description and Budget Item Justification

The IBS 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 is comprised of the following:
- A Common Interactive Broadcast (CIB) on UHF (Ultra High Frequency) satellite channel using a Common Message Format (CMF) and a Military Standard (MIL-STD) Demand Assigned Multiple Access (DAMA) compliant waveform and Line of Sight (LOS) using the Wideband Networking Waveform (WNW) and Joint Tactical Terminal (JTT).
 - 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), all built to validated warfighter requirements.
 - 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 broadcast) to receive the CIB information broadcast. Additionally, the TIN will receive and inject data into the CIB for producers without access to the theater CIB.

This PE funds:
 - Development/upgrades of IBS (IBS-NS, CIB, and CMF)

This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver IBS weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

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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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	8.568	0.000	0.000	0.000	0.000
Current President's Budget	9.887	0.000	0.000	0.000	0.000
Total Adjustments	1.319	0.000	0.000	0.000	0.000
• 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	1.319	0.000	0.000	0.000	0.000

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Title: Development/upgrades of the Integrated Broadcast Service (IBS-NS, CIB, and CMF) Description: Development/upgrades of the IBS (IBS-NS, CIB, and CMF). FY 2020 Plans: N/A FY 2021 Plans: Development/upgrades of the IBS (IBS-NS, CIB, and CMF).	7.978	0.000	0.000
Title: Enterprise Systems Engineering Description: Enterprise Systems Engineering/CMF Integration/CIB Integration. FY 2020 Plans: N/A FY 2021 Plans: Enterprise Systems Engineering/CMF Integration/CIB Integration.	0.919	0.000	0.000
Title: Test & Evaluation Description: Tests & Evaluates the IBS system.	0.990	0.000	0.000

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: N/A			
FY 2021 Plans: Tests & Evaluates the IBS system.			
Accomplishments/Planned Programs Subtotals	9.887	0.000	0.000

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 Line Item 832070: <i>Intelligence Comm Equipment</i>	0.000	16.743	17.134	-	17.134	17.341	17.667	17.985	-	Continuing	Continuing
• SPAF 01 IBS000: <i>INTEG BROADCAST SERV</i>	16.445	-	-	-	-	-	-	-	-	0.000	16.445

Remarks

E. Acquisition Strategy
 IBS is in the PEO Battle Management portfolio and executed by AFLCMC/HBG.

 IBS uses an Adaptive Life-cycle approach that provides incremental improvement and new capability in 90-day cycles.

 For contracting efforts, a Single Award IDIQ contract with multiple task orders was awarded to CACI International Inc.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force												Date: February 2020				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 1203179F / Integrated Broadcast Service (IBS)				674779 / Integrated Broadcast Service (IBS)								
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	
Product Development	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-	
IBS (IBS-NS, CIB, and CMF) Development/ Upgrades	Various	CACI International Inc/Other Government Agency : Various	-	7.877	Oct 2018	-		-		-		-	Continuing	Continuing	-	
Subtotal			-	7.877		-		-		-		-	Continuing	Continuing	N/A	
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	
Test and Evaluation	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-	
Interoperability and Development Testing	MIPR	JITC : Ft Huachuca, AZ	-	0.600	Oct 2018	-		-		-		-	Continuing	Continuing	-	
Responsible Test Organization (RTO)	PO	46th Test Squadron : Eglin AFB, FL	-	0.350	Oct 2018	-		-		-		-	Continuing	Continuing	-	
Subtotal			-	0.950		-		-		-		-	Continuing	Continuing	N/A	
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	
Management Services	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-	
Program Management/ Engineering Support	C/FFP	Creedence : Warner Robins, GA	-	0.160	Nov 2018	-		-		-		-	Continuing	Continuing	-	
Enterprise Engineering/ CMF Integration/CIB Integration	SS/CPFF	L3 Comm, IS : Greenville, TX	-	0.900	Nov 2018	-		-		-		-	Continuing	Continuing	-	
Subtotal			-	1.060		-		-		-		-	Continuing	Continuing	N/A	

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203179F / <i>Integrated Broadcast Service (IBS)</i>	Project (Number/Name) 674779 / <i>Integrated Broadcast Service (IBS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
IBS-NS				
Continue development of the IBS Thin Client	1	2019	1	2019
Continue development of the CIB MUOS Group Integration - Many to Many	1	2019	1	2019
Continue to upgrade and transition of current classified dissemination path to new architecture and enabling SCI-level dissemination of data	1	2019	4	2020
Continue to upgrade the uplink sites to handle operational surge increases	1	2019	4	2020
Continue to develop the monitoring and control tools to assist in assured dissemination	1	2019	4	2020
Continue to integrate CMF updates into IBS-NS	1	2019	4	2020
Enterprise Systems Engineering of IBS (IBS-NS, CIB, and CMF)	1	2019	4	2020
Testing and Evaluation of IBS (IBS-NS, CIB, and CMF)	1	2019	4	2020