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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force **Date:** February 2016

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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	8.592	7.860	8.833	0.000	8.833	8.722	8.629	8.790	8.946	Continuing	Continuing
674779: <i>Integrated Broadcast Service</i>	-	8.592	7.860	8.833	0.000	8.833	8.722	8.629	8.790	8.946	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Integrated Broadcast Service (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 satellite channel using a Common Message Format (CMF) and a 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, 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:

- Modernization 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 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.

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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	8.592	7.860	8.921	0.000	8.921
Current President's Budget	8.592	7.860	8.833	0.000	8.833
Total Adjustments	0.000	0.000	-0.088	0.000	-0.088
• 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	-0.088	0.000	-0.088

Change Summary Explanation

- FY17: \$88K "Inflation rate reduction for Non-pay/non-fuel".

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
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Title: Modernization of Integrated Broadcast Service (IBS-NS, CIB, and CMF)	7.102	6.370	7.343
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Description: Modernizes IBS (IBS-NS, CIB, and CMF).

FY 2015 Accomplishments:

- Initiated enabling SCI-level dissemination of data
- Initiated providing IBS Enterprise-level real-time and analytic views on Global and COCOM watch floors
- Initiated providing resilience to IBS CIB UHF Broadcast by utilizing the Mobile User Objective System (MUOS) Wideband Code Division Multiple Access (WCDMA) SATCOM payload and supporting the receipt of IBS on 1st generation MUOS terminals
- Initiated connecting the COCOM J2 CIB planning function with the COCOM J6 Integrated Waveform planning function
- Continued providing P5 system health and welfare status at the COCOMs
- Continued integrating CMF updates into IBS-NS

FY 2016 Plans:

- Initiate development of the IBS ISR Cloud Interface which provides a long term searchable data store for IBS information

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Continue providing IBS Enterprise-level real-time and analytic views on Global and COCOM watch floors - Initiate providing performance enhancement to throughput, storage and replay to address increased volume of messages for IBS-NS as well as Over the Air (OTA) capabilities - Continue providing resilience to IBS CIB UHF Broadcast by utilizing the Mobile User Objective System (MUOS) Wideband Code Division Multiple Access (WCDMA) SATCOM payload and supporting the receipt of IBS on 1st generation MUOS terminals - Continue connecting the COCOM J2 CIB planning function with the COCOM J6 Integrated Waveform planning function - Initiate integration of the CIB Planning Tool and IBS-NS capability at the COCOMs to allow automated planning to occur for active producers - Continue providing P5 system health and welfare status at the COCOMs - Initiate transition of current classified dissemination path to new architecture - Initiate enhancement of uplink sites to handle operational surge increases - Initiate modifying monitoring and control tools to assist in assured dissemination tasks at COCOM uplink watches, development and fielding of Downlink Monitoring Element (DME) - Continue integrating CMF updates into IBS-NS <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Will continue development of the IBS ISR Cloud Interface which provides a long term searchable data store for IBS information - Will continue providing IBS Enterprise-level real-time and analytic views on Global and COCOM watch floors - Will continue providing performance enhancement to throughput, storage and replay to address increased volume of messages - Will continue providing resilience to IBS CIB UHF Broadcast by utilizing the Mobile User Objective System (MUOS) Wideband Code Division Multiple Access (WCDMA) SATCOM payload and supporting the receipt of IBS on 1st generation MUOS terminals 				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Will continue integration of the CIB Planning Tool and IBS-NS capability at the COCOMs to allow automated planning to occur for active producers - Will initiate development of the IBS Thin Client, which provides a light weight application to receive IBS information on mobile devices - Will initiate development of the CIB MUOS Group Integration - Many to Many, which achieves IBS Over the Air requirements on the MUOS Wideband Code Division Multiple Access (WCDMA) payload. - Will continue providing P5 system health and welfare status at the COCOMs - Will continue transition of current classified dissemination path to new architecture - Will continue enhancement of uplink sites to handle operational surge increases - Will continue modifying monitoring and control tools to assist in assured dissemination tasks at COCOM uplink watches, development and fielding of Downlink Monitoring Element (DME) - Will continue integration of CMF Updates into IBS-NS 				
<p>Title: Enterprise Systems Engineering</p> <p>Description: Enterprise Systems Engineering/CMF Integration/CIB Integration.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Continued Enterprise Systems Engineering/CMF Integration/CIB Integration <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> - Continuing Enterprise Systems Engineering/CMF Integration/CIB Integration <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Will continue Enterprise Systems Engineering/CMF Integration/CIB Integration 		0.700	0.700	0.700
<p>Title: Test & Evaluation</p> <p>Description: Tests & Evaluates the IBS system.</p>		0.790	0.790	0.790

UNCLASSIFIED

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<i>FY 2015 Accomplishments:</i> - Tested and evaluated the IBS system <i>FY 2016 Plans:</i> - Testing and evaluating the IBS system <i>FY 2017 Plans:</i> - Will test and evaluate the IBS system			
Accomplishments/Planned Programs Subtotals	8.592	7.860	8.833

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line Item # 832070: <i>Intelligence Comm Equipment</i>	14.949	11.411	16.452	0.000	16.452	17.120	16.419	16.709	17.010	Continuing	Continuing

Remarks

E. Acquisition Strategy
 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 L-3 National Security Solutions.

F. Performance Metrics
 Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force												Date: February 2016				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0305179F / Integrated Broadcast Service (IBS)				674779 / Integrated Broadcast Service								
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 (IBS-NS, CIB, and CMF) Modernization	Various	L-3 National Security Systems/L-3 Comm, IS/Other Government Agency : Various	-	6.942	Oct 2014	6.210	Oct 2015	7.183	Oct 2016	0.000		7.183	Continuing	Continuing	TBD	
Subtotal			-	6.942		6.210		7.183		0.000		7.183	-	-	-	
Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	
Subtotal			-	-		-		-		-		-	-	-	-	
Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	-	0.500	Oct 2014	0.500	Oct 2015	0.500	Oct 2016	0.000		0.500	Continuing	Continuing	TBD	
Responsible Test Organization (RTO)	PO	46th Test Squadron : Eglin AFB, FL	-	0.290	Oct 2014	0.290	Oct 2015	0.290	Oct 2016	0.000		0.290	Continuing	Continuing	TBD	
Subtotal			-	0.790		0.790		0.790		0.000		0.790	-	-	-	
Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	
Program Management/ Engineering Support	C/FFP	Creedence : Warner Robins, GA	-	0.160	Apr 2015	0.160	Nov 2015	0.160	Nov 2016	0.000		0.160	Continuing	Continuing	TBD	
Enterprise Engineering/ CMF Integration/CIB Integration	SS/CPFF	L3 Comm, IS : Greenville, TX	-	0.700	Jan 2015	0.700	Jan 2016	0.700	Jan 2017	0.000		0.700	Continuing	Continuing	TBD	

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
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</i>

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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-NS Acquisition Strategy Plan (ASP) for Follow On Contract				■																								
IBS-NS Follow On Contract Award								■																				
IBS (IBS-NS, CIB, and CMF) FOC																				■								
Modernization of IBS (IBS-NS, CIB, and CMF)	■																											
Initiated Enabling SCI-level Dissemination of Data	■																											
Initiated providing IBS Enterprise-level real time and analytic views on Global and COCOM watch floors	■																											
Initiated providing resilience to IBS CIB UHF Broadcast by utilizing the Mobile User Objective System (MUOS) Wideband Code Division Multiple Access (WCDMA) SATCOM payload	■																											
Initiated connecting the COCOM J2 CIB planning function with the COCOM J6 Integrated Waveform planning function	■																											
Initiate Development of ISR Cloud Interface								■																				
Initiate providing performance enhancement to throughput, storage and replay								■																				
Initiate Development of CIB Planning Tool and IBS-NS Capability at the COCOMs to Allow Automated Planning								■																				
Initiate transition of current classified dissemination path to new architecture								■																				
Initiate a solution for enhancement of uplink sites to handle operational surge increases								■																				

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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021							
	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				
Initiate development of new monitoring and control tools to assist in assured dissemination tasks																																
Will initiate development of the IBS Thin Client																																
Will initiate development of the CIB MUOS Group Integration - Many to Many																																
Enterprise Systems Engineering of IBS (IBS-NS, CIB, and CMF)																																
Testing and Evaluation of IBS (IBS-NS, CIB, and CMF)																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IBS-NS Acquisition Strategy Plan (ASP) for Follow On Contract	4	2015	4	2015
IBS-NS Follow On Contract Award	4	2016	4	2016
IBS (IBS-NS, CIB, and CMF) FOC	4	2019	4	2019
Modernization of IBS (IBS-NS, CIB, and CMF)	1	2015	4	2021
Initiated Enabling SCI-level Dissemination of Data	1	2015	1	2015
Initiated providing IBS Enterprise-level real time and analytic views on Global and COCOM watch floors	1	2015	1	2015
Initiated providing resilience to IBS CIB UHF Broadcast by utilizing the Mobile User Objective System (MUOS) Wideband Code Division Multiple Access (WCDMA) SATCOM payload	1	2015	1	2015
Initiated connecting the COCOM J2 CIB planning function with the COCOM J6 Integrated Waveform planning function	1	2015	1	2015
Initiate Development of ISR Cloud Interface	1	2016	1	2016
Initiate providing performance enhancement to throughput, storage and replay	1	2016	1	2016
Initiate Development of CIB Planning Tool and IBS-NS Capability at the COCOMs to Allow Automated Planning	1	2016	1	2016
Initiate transition of current classified dissemination path to new architecture	1	2016	1	2016
Initiate a solution for enhancement of uplink sites to handle operational surge increases	1	2016	1	2016
Initiate development of new monitoring and control tools to assist in assured dissemination tasks	1	2016	1	2016
Will initiate development of the IBS Thin Client	1	2017	1	2017
Will initiate development of the CIB MUOS Group Integration - Many to Many	1	2017	1	2017
Enterprise Systems Engineering of IBS (IBS-NS, CIB, and CMF)	1	2015	4	2021
Testing and Evaluation of IBS (IBS-NS, CIB, and CMF)	1	2015	4	2021