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

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 1208053A / Joint Tactical Ground System
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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	-	7.400	7.677	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.077
FE7: Joint Tact Grd Station-P3I(MIP)	-	7.400	7.677	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.077

Note

FY 2021 requested funding has been moved from PE 1208053A to PE 0208053A.

A. Mission Description and Budget Item Justification

The Joint Tactical Ground Station (JTAGS) is a post-production, ACAT III program. JTAGS provides missile warning message data for the Air and Missile Defense (AMD) architecture and improves performance for Integrated Air and Missile Defense Fire Control Systems/Composite Army Air and Missile Defense Brigades. JTAGS disseminates near real time warning, alerting, and cueing information on ballistic missile launches and other tactical events of interest throughout the theater using existing communication networks, providing critical support to Combatant Commanders in their Areas of Responsibility (AOR). Four OCONUS deployed JTAGS units, which are deployed in three theaters (PACOM, CENTCOM, EUCOM), constitute DoD's only in-theater system providing space-based missile warning. The fifth CONUS system is used as an institutional trainer though is available as a deployable asset. JTAGS is designated as the in-theater element of the United States Strategic Command's Theater Event System (TES), supporting all Theater Missile Defense pillars, affording the shortest sensor to shooter connectivity. On 14 Jan 2016, the Army Acquisition Executive designated the JTAGS Pre-Planned Product Improvement (JTAGS P3I) program as a separate ACAT III modification program.

The JTAGS Program Element (PE) supports development and test to meet JTAGS Operational Requirement(s) Document (ORD) thresholds using improved sensors and algorithms as Pre-Planned Product Improvements (P3I). P3I Improvements upgrade JTAGS to a new Block II configuration for operation with the next generation of Space Based Infrared System (SBIRS) satellites, and improves warning tactical parameters and timeliness. JTAGS Block II is on contract for a two-Phase development effort. JTAGS Block II Phase 1 is complete. JTAGS Block II Phase 2 activities are broken into three spirals to expedite delivering critical capabilities sooner. Phase 2 Spiral 1 and Spiral 2 will be completed in FY 2020.

FY 2021 requested funding has been moved from PE 1208053A to PE 0208053A.

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1208053A / <i>Joint Tactical Ground System</i>
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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	7.400	10.275	9.519	-	9.519
Current President's Budget	7.400	7.677	0.000	-	0.000
Total Adjustments	0.000	-2.598	-9.519	-	-9.519
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.598			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-9.519	-	-9.519

Change Summary Explanation

FY 2021 requested funding has been moved from PE 1208053A to PE 0208053A.

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 1208053A / <i>Joint Tactical Ground System</i>				Project (Number/Name) FE7 / <i>Joint Tact Grd Station-P3I(MIP)</i>			
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
FE7: <i>Joint Tact Grd Station-P3I(MIP)</i>	-	7.400	7.677	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.077
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2021 requested funding has been moved from PE 1208053A to PE 0208053A / 635.

A. Mission Description and Budget Item Justification

The Joint Tactical Ground Station (JTAGS) is a post-production, ACAT III program. JTAGS provides missile warning message data for the Air and Missile Defense (AMD) architecture and improves performance for Integrated Air and Missile Defense Fire Control Systems/Composite Army Air and Missile Defense Brigades. JTAGS disseminates near real time warning, alerting, and cueing information on ballistic missile launches and other tactical events of interest throughout the theater using existing communication networks, providing critical support to Combatant Commanders in their Areas of Responsibility (AOR). Four OCONUS deployed JTAGS units, which are deployed in three theaters (PACOM, CENTCOM, EUCOM), constitute DoD's only in-theater system providing space-based missile warning. The fifth CONUS system is used as an institutional trainer though is available as a deployable asset. JTAGS is designated as the in-theater element of the United States Strategic Command's Theater Event System (TES), supporting all Theater Missile Defense pillars, affording the shortest sensor to shooter connectivity. On 14 Jan 2016, the Army Acquisition Executive designated the JTAGS Pre-Planned Product Improvement (JTAGS P3I) program as a separate ACAT III modification program.

The JTAGS Program Element (PE) supports development and test to meet JTAGS Operational Requirement(s) Document (ORD) thresholds using improved sensors and algorithms as Pre-Planned Product Improvements (P3I). P3I Improvements upgrade JTAGS to a new Block II configuration for operation with the next generation of Space Based Infrared System (SBIRS) satellites, and improves warning tactical parameters and timeliness. JTAGS Block II is on contract for a two-Phase development effort. JTAGS Block II Phase 1 is complete. JTAGS Block II Phase 2 activities are broken into three spirals to expedite delivering critical capabilities sooner. Phase 2 Spiral 1 and Spiral 2 will be completed in FY 2020.

FY 2021 requested funding has been moved from PE 1208053A to PE 0208053A.

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

	FY 2019	FY 2020	FY 2021
Title: JTAGS Test and Evaluation Support	1.083	0.504	-
Description: Test and evaluation support for the JTAGS P3I Block II program			
FY 2020 Plans:			

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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 1208053A / <i>Joint Tactical Ground System</i>	Project (Number/Name) FE7 / <i>Joint Tact Grd Station-P3I(MIP)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Post Limited User Test (LUT) analysis and reporting. Supporting limited developmental testing for JTAGS Block II Phase 2 Spiral 3 tuning efforts.			
FY 2020 to FY 2021 Increase/Decrease Statement: In FY 2021, funding has been moved from PE 1208053A to PE 0208053A.			
Title: JTAGS Block II Phase 2	6.317	7.173	-
Description: JTAGS Block II Phase 2 activities are broken into three spirals to expedite getting critical capabilities fielded sooner. Spiral 1 delivers stereo SBIRS Geosynchronous staring sensor capabilities and SBIRS HEO Pseudo-Link 4 (P/L 4) data. Spiral 2 delivers Cobra Brass and emerging threats data and Missile Defense System Exerciser (MDSE) capabilities (FY 2018-2020). Spiral 3 delivers software tuning and testing to the Operational Requirements Document (ORD) (FY2019-21). JROC-Memos 197-12 and 113-13 supports the need to develop and field JTAGS Block II capabilities as soon as possible.			
FY 2020 Plans: Will continue limited development efforts of the JTAGS Block II Phase 2 Spiral 3 program which focuses on software tuning efforts to fully optimize sensor data, and evolving cyber hardening advances. Also covers some Government management/oversight.			
FY 2020 to FY 2021 Increase/Decrease Statement: In FY 2021, funding has been moved from PE 1208053A to PE 0208053A.			
Accomplishments/Planned Programs Subtotals	7.400	7.677	-

C. 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>
• BZ8420: <i>JOINT TACTICAL GROUND STATION MODS (JTAGS)</i>	5.434	-	0.000	-	0.000	-	6.387	-	-	0.000	11.821
• 0208053A: <i>Joint Tactical Ground System</i>	-	-	9.510	-	9.510	9.665	7.073	7.076	7.080	0.000	40.404

Remarks
In FY 2021, funding has been moved from PE 1208053A to PE 0208053A to correctly align Major Force Program, National Security Space (MFP 12) resources.

D. Acquisition Strategy
This program element develops critical software intensive improvements, while continuing to make maximum use of Non-Developmental Items (NDI)/Commercial Off-The-Shelf (COTS) components and Government Furnished Equipment (GFE). After design and integration, the system will be subject to thorough developmental and

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validation/verification testing to verify performance, operational effectiveness and suitability. P3I Improvements will upgrade JTAGS to a new Block II configuration for operation with the next generation of Space Based Infrared System (SBIRS) satellites, improving warning tactical parameters and timeliness. The acquisition of the JTAGS Block II effort is being performed under contract W9113M-12-C-0055, awarded 23 Aug 2012. The contract's development efforts are Cost Plus Incentive Fee (CPIF), and the contract's production is Firm Fixed Price (FFP).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 7				PE 1208053A / Joint Tactical Ground System				FE7 / Joint Tact Grd Station-P3I(MIP)							
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
Government Program Management	Allot	Various : Redstone Arsenal AL	2.689	1.190	Oct 2018	1.161	Oct 2019	-		-		-	Continuing	Continuing	-
Subtotal			2.689	1.190		1.161		-		-		-	Continuing	Continuing	N/A
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
JTAGS P3I Block II Phase 2 Development	Option/CPIF	Northrop Grumman : Colorado Springs Co	4.590	3.749	Dec 2018	4.635	Dec 2019	-		-		-	Continuing	Continuing	-
Subtotal			4.590	3.749		4.635		-		-		-	Continuing	Continuing	N/A
Support (\$ 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
Contractor Engineering Support	C/CPIF	TBD : Huntsville AL	1.333	1.378	Apr 2019	1.377	Feb 2020	-		-		-	Continuing	Continuing	-
Subtotal			1.333	1.378		1.377		-		-		-	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 Support (ATEC/AIC/JITC)	Various	Various : Various	1.616	1.083	Dec 2018	0.504	Dec 2019	-		-		-	Continuing	Continuing	-
Subtotal			1.616	1.083		0.504		-		-		-	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army							Date: February 2020				
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	Prior Years	FY 2019	FY 2020		FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	10.228	7.400	7.677		-	-	-	Continuing	Continuing	N/A	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 1208053A / <i>Joint Tactical Ground System</i>	Project (Number/Name) FE7 / <i>Joint Tact Grd Station-P3I(MIP)</i>

Event Name	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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
JTAGS P3I Block II Phase 2																												
JTAGS P3I Block II Phase 2 Spiral 1 (Starer, P/L4)																												
JTAGS P3I Block II Phase 2 Spiral 2 (Cobra Brass and Slow Wal)																												
JTAGS P3I Block II Phase 2 Spiral 3 (limited tuning and testing to																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 1208053A / <i>Joint Tactical Ground System</i>	Project (Number/Name) FE7 / <i>Joint Tact Grd Station-P3I(MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JTAGS P3I Block II Phase 2	4	2015	4	2020
JTAGS P3I Block II Phase 2 Spiral 1 (Starer, P/L4)	4	2015	2	2020
JTAGS P3I Block II Phase 2 Spiral 2 (Cobra Brass and Slow Walkers)	4	2017	2	2020
JTAGS P3I Block II Phase 2 Spiral 3 (limited tuning and testing to ORD)	3	2018	4	2020

Note

JTAGS P3I program continues after FY20 under PE 0208053A