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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 1208053A I Joint Tactical Ground System							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	0.000	10.228	7.400	-	7.400	9.282	9.529	11.209	11.658	0.000	59.306
FE7: Joint Tact Grd Station-P3I(MIP)	-	0.000	10.228	7.400	-	7.400	9.282	9.529	11.209	11.658	0.000	59.306

## Note

Funding moved from PE 0208053A to PE 1208053A as directed by OSD to track Space Programs.

## A. Mission Description and Budget Item Justification

The Joint Tactical Ground Station (JTACS) is a post-production, ACAT III program and is designated as a DoD Space Program. JTACS 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.

JTACS Block I system is a transportable information processing system, receiving and processing in-theater, direct down-linked data from Defense Support Program (DSP) and other Infrared (IR) satellites. JTACS 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 JTACS 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 being used as an institutional trainer but is available as a deployable asset. JTACS 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. JTACS funding was moved to a new PE as directed by OSD to track Space Programs. Program Office core employee labor costs have been moved from RDTE to OMA as part of an OSD auditability directive.

The JTACS Program Element (PE) supports development and test to meet JTACS Operational Requirement(s) Document (ORD) thresholds using improved sensors and algorithms as Pre-Planned Product Improvements (P3I). The P3I Improvements will upgrade JTACS to a new Block II configuration for operation with the next generation of Space Based Infrared System (SBIRS) satellites, and will improve warning tactical parameters and timeliness. JTACS Block II is on contract for a two-Phase development effort. JTACS Block II Phase 1 is complete. JTACS Block II Phase 2 activities are broken into three spirals to expedite getting critical capabilities fielded sooner. P3I Block II Phase 2 Spiral 1 delivers Increased sensor capabilities to include, but not be limited to, GEO satellite Starer and additional Highly Elliptical Orbit data. Spiral 2 delivers increased sensor, communications, training, and exercise capabilities to include, but not be limited to, integration of the Missile Defense System Exerciser (FY2018-19). Spiral 3 delivers software tuning and testing in accordance with the Operational Requirements Document (ORD) (FY2019-20). JROC-Memos 197-12 and 113-13 supports the need to develop and field JTACS Block II capabilities as soon as possible.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army				Date: February 2018	
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			
B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	0.000	10.228	11.594	-	11.594
Current President's Budget	0.000	10.228	7.400	-	7.400
Total Adjustments	0.000	0.000	-4.194	-	-4.194
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-4.194	-	-4.194
Change Summary Explanation					
Program Office core employee labor costs \$1.536 million moved from RDTE to OMA as part of an OSD auditability directive.					
The FY 2019 funding request was reduced by \$2.658 million to account for the availability of prior year execution balances					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 1208053A / Joint Tactical Ground System				Project (Number/Name) FE7 / Joint Tact Grd Station-P3I(MIP)			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
FE7: Joint Tact Grd Station-P3I(MIP)	-	0.000	10.228	7.400	-	7.400	9.282	9.529	11.209	11.658	0.000	59.306
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Funding moved from PE 0208053A to PE 1208053A as directed by OSD to track Space Programs

**A. Mission Description and Budget Item Justification**

The Joint Tactical Ground Station (JTAGS) is a post-production, ACAT III program and is designated as a DoD Space 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 Block I system is a transportable information processing system, receiving and processing in-theater, direct down-linked data from Defense Support Program (DSP) and other Infrared (IR) satellites. 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 being used as an institutional trainer but 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. JTAGS funding was moved to a new PE as directed by OSD to track Space Programs. Program Office core employee labor costs have been moved from RDTE to OMA as part of an OSD auditability directive.

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). The P3I Improvements will upgrade JTAGS to a new Block II configuration for operation with the next generation of Space Based Infrared System (SBIRS) satellites, and will improve 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 getting critical capabilities fielded sooner. P3I Block II Phase 2 Spiral 1 delivers Increased sensor capabilities to include, but not be limited to, GEO satellite Starer and additional Highly Elliptical Orbit data. Spiral 2 delivers increased sensor, communications, training, and exercise capabilities to include, but not be limited to, integration of the Missile Defense System Exerciser (FY2018-19). Spiral 3 delivers software tuning and testing in accordance with the Operational Requirements Document (ORD) (FY2019-20). JROC-Memos 197-12 and 113-13 supports the need to develop and field JTAGS Block II capabilities as soon as possible.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> JTAGS Test and Evaluation Support	-	1.616	1.083

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army									Date: February 2018		
Appropriation/Budget Activity 2040 / 7				R-1 Program Element (Number/Name) PE 1208053A / Joint Tactical Ground System				Project (Number/Name) FE7 / Joint Tact Grd Station-P3I(MIP)			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2017	FY 2018	FY 2019
Description: Test and evaluation support for the JTAGS P3I Block II program											
FY 2018 Plans: Begin testing support of the JTAGS P3I Block II Phase 2 Spiral 2 development program											
FY 2019 Plans: Complete testing support of the JTAGS P3I Block II Phase 2 Spiral 2 development program											
FY 2018 to FY 2019 Increase/Decrease Statement: Funding for testing efforts decreased due to test completions in FY 2018 and reduced testing requirements in FY 2019.											
Title: JTAGS Block II Phase 2									-	8.612	6.317
Description: JTAGS Block II Phase 2 activities are broken into three spirals to expedite getting critical capabilities fielded sooner. P3I Block II Phase 2 Spiral 1 delivers stereo SBIRS Geosynchronous scanner capability and SBIRS HEO Pseudo-Link 4 (P/ L 4) data. Spiral 2 delivers Cobra Brass and "Walkers" data (FY2018-19). Spiral 3 delivers software tuning and testing to the Operational Requirements Document (ORD) (FY2019-20). JROC-Memos 197-12 and 113-13 supports the need to develop and field JTAGS Block II capabilities as soon as possible Also includes Government management/oversight of the JTAGS Block II program.											
FY 2018 Plans: Begin development efforts of the JTAGS Block II Phase 2 Spiral 2 program and Government management/oversight.											
FY 2019 Plans: Continue development efforts of the JTAGS Block II Phase 2 Spiral 2 program. Also covers some Government management/ oversight.											
FY 2018 to FY 2019 Increase/Decrease Statement: Funding for Block II Phase 2 development efforts decreased to account for the availability of prior year execution balances.											
Accomplishments/Planned Programs Subtotals									-	10.228	7.400
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• 635: Joint Tact Grd Station-P3I(MIP)	12.649	-	0.000	-	0.000	-	-	-	-	0.000	12.649

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Army										<b>Date:</b> February 2018	
<b>Appropriation/Budget Activity</b> 2040 / 7				<b>R-1 Program Element (Number/Name)</b> PE 1208053A / <i>Joint Tactical Ground System</i>				<b>Project (Number/Name)</b> FE7 / <i>Joint Tact Grd Station-P3I(MIP)</i>			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• BZ8420: <i>JOINT TACTICAL GROUND STATION MODS (JTAGS)</i>	4.417	-	5.434	-	5.434	-	-	-	6.393	0.000	16.244
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
<p>Under this program element, critical improvements will be developed making maximum use of Non-Developmental Items (NDI)/Commercial Off-The-Shelf (COTS) components. After design and integration, the system will be subject to thorough developmental and 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. JTAGS Block II is on contract for a two-Phase development effort. JTAGS Block II Phase 2 is further divided into three spirals to provide critical capabilities to the fielded units faster. JTAGS Block II Phase 2 Spiral 1 delivers stereo SBIRS Geosynchronous scanner capability and SBIRS Highly Elliptical Orbit (HEO) Pseudo-Link 4 (P/L 4) data. Spiral 2 delivers Cobra Brass and "Walkers" data (FY2018-19). Spiral 3 delivers software tuning and testing in accordance with the Operational Requirements Document (ORD) (FY2019-20). JTAGS Block II Phase 2 is a Cost Plus Incentive Fee (CPIF) option on the JTAGS Block II (P3I) contract (W9113M-12-C-0055). The option was definitized 4Q17. JROC-Memos 197-12 and 113-13 direct fielding of JTAGS Block II capabilities as soon as possible.</p>											
<b>E. Performance Metrics</b>											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 7						R-1 Program Element (Number/Name) PE 1208053A / Joint Tactical Ground System				Project (Number/Name) FE7 / Joint Tact Grd Station-P3I(MIP)					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	-		1.190	0.000	3.879	-
Subtotal			-	-		2.689		1.190		-		1.190	0.000	3.879	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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/ C/PIF	Northrop Grumman : Colorado Springs Co	-	-		4.590	Dec 2017	3.749	Dec 2018	-		3.749	Continuing	Continuing	-
Subtotal			-	-		4.590		3.749		-		3.749	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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/CPFF	TBD : Huntsville AL	-	-		1.333	Dec 2017	1.378	Nov 2018	-		1.378	Continuing	Continuing	-
Subtotal			-	-		1.333		1.378		-		1.378	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	Dec 2017	1.083	Dec 2018	-		1.083	Continuing	Continuing	-
Subtotal			-	-		1.616		1.083		-		1.083	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army											Date: February 2018			
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 1208053A / Joint Tactical Ground System					Project (Number/Name) FE7 / Joint Tact Grd Station-P3I(MIP)				
		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	-		10.228		7.400		-		7.400	Continuing	Continuing	N/A

Remarks

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2019 Army</b>			<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 2040 / 7		<b>R-1 Program Element (Number/Name)</b> PE 1208053A / <i>Joint Tactical Ground System</i>		<b>Project (Number/Name)</b> FE7 / <i>Joint Tact Grd Station-P3I(MIP)</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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 2 (Cobra Brass and Slow Walkers)																												
JTAGS P3I Block II Phase 2 Spiral 3 (tuning and testing to ORD)																												
Future Sensor Integration and Technology Refresh																												



**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 Army			<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 2040 / 7	<b>R-1 Program Element (Number/Name)</b> PE 1208053A / <i>Joint Tactical Ground System</i>	<b>Project (Number/Name)</b> FE7 / <i>Joint Tact Grd Station-P3I(MIP)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JTAGS P3I Block II Phase 2	1	2018	3	2021
JTAGS P3I Block II Phase 2 Spiral 2 (Cobra Brass and Slow Walkers)	1	2018	1	2021
JTAGS P3I Block II Phase 2 Spiral 3 (tuning and testing to ORD)	4	2019	3	2020
Future Sensor Integration and Technology Refresh	3	2020	4	2022