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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	-	-	54.972	-	54.972	-	-	-	-	-	-
BY5: <i>Tactical Intelligence Targeting Access Node EMD</i>	-	-	-	54.972	-	54.972	-	-	-	-	-	-

Note

Program Element 0605148A Tactical Intel Targeting Access Node (TITAN) EMD transitioned from PE 0305208A in FY2022.

A. Mission Description and Budget Item Justification

TITAN is a scalable and expeditionary intelligence ground station that supports commanders across the entire Multi-Domain Operations (MDO)/Joint All Domain Operations (JADO) battlefield framework with capabilities tailored to echelon. TITAN leverages Space, High Altitude, Aerial and Terrestrial layer sensors to provide targetable data to fires networks as well as multi-discipline intelligence support to targeting and Situation Awareness/Situation Understanding (SA/SU) in support of mission command.

TITAN is the future Army Intelligence, Surveillance, and Reconnaissance (ISR) ground station that will consolidate the sensor processing capabilities in the current Distributed Common Ground System-Army (DCGS-A) Operational-Intelligence Ground Station (OGS), Tactical-Intelligence Ground Station (TGS), the Advanced Miniaturized Data Acquisition System Dissemination Vehicle (ADV) and the Remote Ground Terminal (RGT). Additionally, TITAN will have the access and sensor tasking or control capabilities of the future Tactical Space Layer assets, National assets, the Multi-Domain Sensing Systems (MDSS) as well as commercial overhead sensors. Consequently, the TITAN ground station will be able to conduct deep sensing operations with the abilities to Task, Collect, Process, Exploit, and Disseminate (TCPED) information from Space, High Altitude, Aerial, and Terrestrial Layer sensors in support of Long Range Precision Fires (LRPF) operations.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	54.972	-	54.972
Total Adjustments	0.000	0.000	54.972	-	54.972
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	54.972	-	54.972

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<u>Change Summary Explanation</u> TITAN Ground Station funding transitioned from Program Element 0305208A to PE 0605148A Tactical Intel Targeting Access Node (TITAN) EMD in FY22.		

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Army										Date: May 2021		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>				Project (Number/Name) BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
BY5: <i>Tactical Intelligence Targeting Access Node EMD</i>	-	-	-	54.972	-	54.972	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Element 0605148A Tactical Intel Targeting Access Node (TITAN) EMD transitioned from PE 0305208A in FY2022.

A. Mission Description and Budget Item Justification

TITAN directly addresses the U.S. Army Combined Arms Center's (USACAC) Multi-Domain Operations (MDO) gap #1: Lack of echelons above corps (EAC) multi-domain deep sensing, analysis, and processing, exploitation and dissemination (PED) for indications & warning (I&W) and anti-access/area denial (A2/AD) targeting. Furthermore, TITAN indirectly addresses MDO Gap 2: No theater detect, decide, deliver, assess (D3A) and convergence of Long Range Precision Fires (LRPF) to disintegrate A2/AD and MDO Gap #3: Lack of EAC LRPF capacity to dis-integrate A2/AD and shape the deep fight. TITAN supports these MDO gaps by providing the sensor data receipt and control, analysis, exploitation, and dissemination functions needed to enable LRPF. The system is postured to provide the fighting force with improved capacity and capability to "stimulate, see, and strike the enemy."

The FY22 funds in the amount of \$54.972M will fund the initial Development, Integration, and Testing of four production-representative TITAN prototype systems. Integrate high altitude, aerial and terrestrial sensor data feeds. Integrate TENCAP-developed Space-Ground Component Kit (SGCK). Fund updates, integration, accreditation, & testing of new capabilities resulting from new sensor feeds and emerging technologies. Includes Developmental and Operational Testing activities and soldier touchpoints to test-fix-test capabilities.

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

	FY 2020	FY 2021	FY 2022
Title: Project Management	-	-	4.872
Description: Funds needed to execute system development and integration activities, deliver acquisition and logistics documentation, perform system cyber security, accreditation and Human Systems Integration (HSI) efforts.			
FY 2022 Plans: Funds program support for initial Development and Integration of four production-representative TITAN prototype systems. Funds updates, integration, and accreditation of new capabilities resulting from new sensor feeds and emerging technologies			
FY 2021 to FY 2022 Increase/Decrease Statement: Program Element 0605148A Tactical Intel Targeting Access Node (TITAN) EMD transitioned from PE 0305208A in FY2022.			
Title: System Development and Integration	-	-	46.243

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>	Project (Number/Name) BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
<p>Description: Funds development and integration activities of up to four production-representative TITAN prototype systems. Integrates system SW baseline and HW system architecture and interfaces. Integrates high altitude, aerial and terrestrial data feeds onto TITAN platform. Integration of TENCAP's SGCK to allow access to commercial, National and Tactical Space Layer capabilities. Funds integration of S&T efforts such as SHOT and Prometheus into TITAN SW baseline.</p> <p>FY 2022 Plans: Funds initial Development, Integration, of four production-representative TITAN prototype systems. Integrates high altitude, aerial and terrestrial sensor data feeds. Integrates space ground component kit. Funds updates, integration, and accreditation of new capabilities resulting from new sensor feeds and emerging technologies</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Program Element 0605148A Tactical Intel Targeting Access Node (TITAN) EMD transitioned from PE 0305208A in FY2022.</p>			
<p>Title: Test Activities</p> <p>Description: Supports Developmental and Operational Testing activities for four production-representative TITAN prototype systems in support of system production decision. Funds all T&E events required by Army Test Community, including multiple soldier touch points.</p> <p>FY 2022 Plans: Funds initial Testing of four production-representative TITAN prototype systems. Funds testing of new capabilities resulting from new sensor feeds and emerging technologies.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Program Element 0605148A Tactical Intel Targeting Access Node (TITAN) EMD transitioned from PE 0305208A in FY2022.</p>	-	-	3.857
Accomplishments/Planned Programs Subtotals	-	-	54.972

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• BY4: <i>Tactical Intelligence Targeting Access Node</i>	-	-	28.347	-	28.347	-	-	-	-	-	-
Remarks	PE 0305208A is being leveraged for FY20 (\$715K) and FY21 activities (\$18,000K).										

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
Funds realigned from Program Element 0305208A in FY22.											

D. Acquisition Strategy

The TITAN program acquisition strategy is to leverage Section 804 Middle-Tier Acquisition (MTA) policy for rapid prototyping program (RPP). This RPP rapidly develops and fields a capability that address multi-domain operations gap that can be demonstrated in an operational environment informing a decision point to transition to Rapid Fielding effort or traditional Milestone C for production. TITAN ground station fielding will be accelerated with this approach while providing increased intelligence capabilities, additional sensor data and processing throughput over time. The MTA decision point is scheduled for the fourth quarter of FY21.

An Other Transaction Authority (OTA) contract will be pursued under the 10 U.S.C. 2371b and the 2016 National Defense Authorization Act (NDAA), Section 815, for TITAN Rapid Prototype and Production. This innovative approach will enable acceleration of the TITAN Ground Station capabilities to the Warfighter. The proposed TITAN acquisition is being solicited on an open competition, best value competition basis.

The TITAN OTA approach is a multi-phased contract vehicle designed to scope each phase separately based on maturing requirements and informed by risk reduction efforts in prior phases.

Phase I, Ground Station Modernization, is a competitive effort in FY21 between two vendors to build system-level designs and mature a SW baseline. At the conclusion of Phase I, a Tech Demo and Critical Design Review (CDR) will inform up-select to one vendor for Phase 2. Phase 2 will be executed starting in FY22 and encompass efforts such as prototyping and development of TITAN critical technologies identified during Phase I, and inform the later Phase 3 (additional Echelon build and integration) and 4 (enhancements and scalability builds) activities. The OTA allows the flexibility for each phase to be executed either in parallel or sequentially.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0605148A / Tactical Intel Targeting Access Node (TITAN) EMD				BY5 / Tactical Intelligence Targeting Access Node EMD							
Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
Project Management	C/FP	Various : APG and Contractor Facility (TBD)	-	-		-		4.872	Dec 2021	-		4.872	Continuing	Continuing	Continuing
Subtotal			-	-		-		4.872		-		4.872	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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
System Development and Integration	C/FP	Various : APG, Ft. Bragg, JBLM,, YPG, CTR FAC (TBD)	-	-		-		46.243	Oct 2021	-		46.243	Continuing	Continuing	Continuing
Subtotal			-	-		-		46.243		-		46.243	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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 Activities	C/FP	Various : APG, YPG, WSMR (OT Location TBD)	-	-		-		3.857	Jan 2022	-		3.857	Continuing	Continuing	Continuing
Subtotal			-	-		-		3.857		-		3.857	Continuing	Continuing	N/A
Project Cost Totals			-	-		0.000		54.972		-		54.972	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>	Project (Number/Name) BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
MDD		▲1																										
Analysis of Alternatives			■																									
AoA SAG					▲2																							
AROC							▲3																					
MTA								▲4																				
OTA Phase 1: Modernization					■																							
Phase 1 Technology Demonstrations/Design Reviews					■																							
CDR									▲5																			
OTA Phase 2: Prototyping, Integration and Test									■																			
Phase 2 Testing (Multiple DT Events/OA)									■																			
OT Complete															▲6													
OTA Phase 3: Tailoring by Echelon													■															
Phase 3 Testing (Multiple DT Events/OA)													■															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
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Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
OTA Phase 4: Joint Sensor Integration/Continuous Integration and Updates.																												
Production Decision													7															
Production Contract																												
Follow-on OTA Contract																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MDD	2	2020	2	2020
Analysis of Alternatives	3	2020	1	2021
AoA SAG	1	2021	1	2021
AROC	3	2021	3	2021
MTA	4	2021	4	2021
OTA Phase 1: Modernization	1	2021	1	2022
Phase 1 Technology Demonstrations/Design Reviews	1	2021	1	2022
CDR	1	2022	1	2022
OTA Phase 2: Prototyping, Integration and Test	1	2022	2	2023
Phase 2 Testing (Multiple DT Events/OA)	1	2022	2	2023
OT Complete	2	2023	2	2023
OTA Phase 3: Tailoring by Echelon	4	2022	2	2024
Phase 3 Testing (Multiple DT Events/OA)	4	2022	2	2024
OTA Phase 4: Joint Sensor Integration/Continuous Integration and Updates.	3	2023	2	2025
Production Decision	4	2023	4	2023
Production Contract	1	2024	4	2024
Follow-on OTA Contract	1	2025	4	2026