

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Army **Date:** April 2022

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>
--	---

COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	-	54.972	58.087	-	58.087	36.013	31.949	31.494	31.801	0.000	244.316
BY5: <i>Tactical Intelligence Targeting Access Node EMD</i>	-	-	54.972	58.087	-	58.087	36.013	31.949	31.494	31.801	0.000	244.316

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

This funding line is a key enabler of the Army Modernization Priorities in support of the Tactical Intelligence Targeting Access Node (TITAN). 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.

This funding line is a key enabler of the Army Modernization Priorities in support of Army Cross Functional Teams.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	0.000	54.972	0.000	-	0.000
Current President's Budget	0.000	54.972	58.087	-	58.087
Total Adjustments	0.000	0.000	58.087	-	58.087
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	58.087	-	58.087

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2023 Army		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>	
<b><u>Change Summary Explanation</u></b> FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.		

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Army										<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 2040 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>				<b>Project (Number/Name)</b> BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
BY5: <i>Tactical Intelligence Targeting Access Node EMD</i>	-	-	54.972	58.087	-	58.087	36.013	31.949	31.494	31.801	0.000	244.316
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**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 FY23 RDTE Dollars in the amount of \$58.087M will fund the continued 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 Soldier touchpoints to test-fix-test capabilities.

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

	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Title:</b> Project Management	-	4.872	4.110
<b>Description:</b> 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.			
<b>FY 2022 Plans:</b> 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			
<b>FY 2023 Plans:</b> Funds program support for Development and Integration of up to two TITAN prototype systems. Funds updates, integration, and accreditation of capabilities for sensor processing, exploitation and dissemination in support of targeting.			
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Reduced project management support required to maintain system development level of effort.			
<b>Title:</b> System Development and Integration	-	46.243	48.253

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Army		<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>	<b>Project (Number/Name)</b> BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p><b>Description:</b> 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&amp;T efforts such as SHOT and Prometheus into TITAN SW baseline.</p> <p><b>FY 2022 Plans:</b> 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><b>FY 2023 Plans:</b> Funds continued Development, Integration, of two 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><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Minute increase in funds programmed for system development and integration.</p>				
<p><b>Title:</b> Test Activities</p> <p><b>Description:</b> Supports Developmental and Operational Testing activities for four production-representative TITAN prototype systems in support of system production decision. Funds all T&amp;E events required by Army Test Community, including multiple soldier touch points.</p> <p><b>FY 2022 Plans:</b> 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><b>FY 2023 Plans:</b> Funds continued Testing of two production-representative TITAN prototype systems. Funds testing of new capabilities resulting from new sensor feeds and emerging technologies.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Testing efforts will be performed for Competitive Prototyping Phase, System Integration; and Enhanced Prototyping Phase, Tailoring at Echelon requirements.</p>		-	3.857	5.724
<b>Accomplishments/Planned Programs Subtotals</b>		-	54.972	58.087

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Army		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>	<b>Project (Number/Name)</b> BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2023</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• BY4: <i>Tactical Intelligence Targeting Access Node</i>	-	28.347	0.863	-	0.863	0.594	4.336	4.133	4.173	0.000	42.446
• K57311: <i>TITAN GROUND STATION</i>	-	-	84.821	-	84.821	298.935	372.787	409.469	350.556	0.000	1,516.568

**Remarks**

**D. Acquisition Strategy**

The TITAN program acquisition strategy is to leverage Middle-Tier of Acquisition (MTA) for Rapid Prototyping. This strategy allows the program to rapidly develop and field a capability that address multi-domain operations gap. The capabilities will be refined through soldier touchpoints and demonstrations/exercises, and inform final TITAN requirements and Concept of Operations (CONOPS). Demonstrating the objective capability in an operational environment will inform a decision point to transition to an MTA Rapid Fielding effort or tailored Milestone C for production. TITAN's open-system architecture approach ensures the system will be tailorable and scalable, with the ability to provide increased intelligence capabilities, additional sensor data and processing throughput over time to keep pace with new technology and changing threat. TITAN's MTA approval is based on an Abbreviated CDD (A-CDD) with an Army Requirements Oversight Council (AROC), which was approved in 1QFY22. The MTA decision point is by 2QFY22.

An Other Transaction Authority (OTA) contract was awarded under the 10 U.S.C. 2371b and the 2016 National Defense Authorization Act (NDAA), Section 815, for TITAN Rapid Prototyping. This innovative approach enables acceleration of the TITAN Ground Station capabilities to the Warfighter. 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. The initial phase, Ground Station Modernization, was competitive risk-reduction effort between two vendors to build system-level designs and mature a Software (SW) baseline. The next phase will be awarded in 3QFY22 and is focused on competitive prototyping between both vendors. The Competitive Prototyping Phase includes further SW baseline refinement to ensure functionality and then begin Hardware (HW) integration within a shelter and on a representative vehicle platform. The TITAN program includes two variants, Advanced and Basic, with Advanced featuring direct downlink (DDL) access to space data and enhanced storage capabilities, and Basic tailored for lower echelons and more expeditionary. At the conclusion of Competitive Prototyping, both vendors will be evaluated against technical feasibility and ability to meet TITAN requirements, which will inform up-select to one vendor. The selected vendor will move on to the final prototyping phase, Prototype maturation, which includes increasing capability of their prototypes to inform final TITAN requirements and support a Production decision. Multiple Soldier Touchpoints and demonstration of capability in the operational force, to ensure usability and inform requirements and CONOPS, will highlight the OTA phases for Rapid Prototyping. TITAN Production may be executed through Major Capability Acquisition (MCA) Milestone C or MTA for Rapid Fielding, and future FAR-based contracts will support both production and sustainment.

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army												Date: April 2022			
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 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	4.110	Jan 2023	-		4.110	Continuing	Continuing	Continuing
<b>Subtotal</b>			-	-		4.872		4.110		-		4.110	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	48.253	Jan 2023	-		48.253	Continuing	Continuing	Continuing
<b>Subtotal</b>			-	-		46.243		48.253		-		48.253	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	5.724	Jan 2023	-		5.724	Continuing	Continuing	Continuing
<b>Subtotal</b>			-	-		3.857		5.724		-		5.724	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	-		54.972		58.087		-		58.087	Continuing	Continuing	N/A
<b>Remarks</b>															

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2023 Army</b>		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>	<b>Project (Number/Name)</b> BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>

Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Analysis of Alternatives	█																											
AoA SAG	▲																											
AROC				▲																								
OTA Phase 1: Modernization	█																											
Phase 1 Technology Demonstrations/Design Reviews	█																											
MTA: Rapid Prototyping Decision Point							▲																					
OTA: Competitive Prototyping Phase (Source Selection)									█																			
Vendor Upselect												▲																
OTA : Prototype Maturation Phase									█																			
Prototype Developing Testing									█																			
Operational Assessment Complete																				▲								
Fielding Decision																								▲				
Fielding Contract																									█			

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2023 Army</b>			<b>Date: April 2022</b>		
<b>Appropriation/Budget Activity</b> 2040 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>		<b>Project (Number/Name)</b> BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>	

Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Follow-on OTA Contract																												

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Army		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605148A / <i>Tactical Intel Targeting Access Node (TITAN) EMD</i>	<b>Project (Number/Name)</b> BY5 / <i>Tactical Intelligence Targeting Access Node EMD</i>

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	1	2022	1	2022
OTA Phase 1: Modernization	1	2021	1	2022
Phase 1 Technology Demonstrations/Design Reviews	1	2021	1	2022
MTA: Rapid Prototyping Decision Point	2	2022	2	2022
OTA: Competitive Prototyping Phase (Source Selection)	3	2022	4	2023
Vendor Upselect	4	2023	4	2023
OTA : Prototype Maturation Phase	4	2023	3	2026
Prototype Developing Testing	1	2024	3	2026
Operational Assessment Complete	2	2026	2	2026
Fielding Decision	3	2026	3	2026
Fielding Contract	3	2026	4	2027
Follow-on OTA Contract	3	2026	4	2027