Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army												Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0604037A *I Tactical Intel Targeting Access Node (TITAN) Adv Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	-	28.347	0.863	10.626	-	10.626	14.308	14.121	4.099	4.145	0.000	76.509
BY4: *Tactical Intelligence Targeting Access Node*	-	28.347	0.863	10.626	-	10.626	14.308	14.121	4.099	4.145	0.000	76.509

A. Mission Description and Budget Item Justification

The Tactical Intelligence Targeting Access Node (TITAN) is a key enabler of the Army Modernization Priorities in support of Army Cross Functional Teams.

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. This funding will provide development and prototyping of Critical Radio Frequency (RF) technologies and integration of Space Force's new Space-Based ISR capabilities into the TITAN POR.

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.

The total cost of the TITAN Middle Tier of Acquisition effort is $486 million RDTE from FY22 to FY26. The TITAN program is fully funded across the Future Years Defense Program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604037A *I Tactical Intel Targeting Access Node (TITAN) Adv Dev*

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	28.347	0.863	0.594	-	0.594
Current President's Budget	28.347	0.863	10.626	-	10.626
Total Adjustments	0.000	0.000	10.032	-	10.032
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	10.032	-	10.032

Change Summary Explanation

Funding increase of $10,000K aligns program with the effort to integrate Space Force's new Space-Based ISR capabilities into the TITAN Program of Record via TENCAP.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604037A / *Tactical Intel Targeting Access Node (TITAN) Adv Dev*	Project (Number/Name) BY4 / *Tactical Intelligence Targeting Access Node*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
BY4: *Tactical Intelligence Targeting Access Node*	-	28.347	0.863	10.626	-	10.626	14.308	14.121	4.099	4.145	0.000	76.509
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Tactical Intelligence Targeting Access Node (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 FY24 RDTE Dollars in the amount of $10.626M will fund continued support efforts to prototype high altitude, aerial and terrestrial sensor data feed, processing and AI/ML operational platforms. Funds will also support efforts to integrate Space-Based Intelligence, Surveillance and Reconnaissance (ISR) capabilities into TITAN.

The total cost of the TITAN Middle Tier of Acquisition effort is $486 million RDTE from FY22 to FY26. The TITAN program is fully funded across the Future Years Defense Program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Development and Prototyping of Critical RF Technologies	15.721	0.313	-
Description: Fund initial Prototyping and Advanced Development of TITAN critical technologies on a representative platform. Development and prototyping of critical RF technologies and technology which currently does not exist or needs significant enhancements to meet TITAN requirements. Fund technology maturation and prototyping of critical TITAN RF technologies including Multi-Link Antennas and CMOSS implementations. Multi-link RF systems will support the simultaneous ingest of multiple sensor data streams in a tactical configuration/footprint Prototype high altitude, aerial and terrestrial sensor data feeds. ***FY 2023 Plans:*** Continued maturation of technologies which will be incorporated into TITAN operational prototypes. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 decrease represents transition of RF technologies from the Competitive Prototype Phase to the Prototype Maturation Phase.			
Title: Development and Prototyping of Critical Automated Processing Technologies	12.626	0.550	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604037A / *Tactical Intel Targeting Access Node (TITAN) Adv Dev*	**Project (Number/Name)** BY4 / *Tactical Intelligence Targeting Access Node*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Description: Fund technology maturation of critical TITAN processing technologies including hyper-computing solutions, AI/ML algorithms to enhance targeting automation, stimulation capabilities and the generation of ML training data. Fund the generation of new training data to aid in automated targeting. Funding will be used to integrate other technology transitioned from the research and development centers across the army to increase the accuracy and precision of TITAN. Existing modeling and simulation tools will be enhanced to account for the additional sensor modalities (EO/IR/SAR/FMV) that TITAN needs to process, which will allow the PM to automate more of the testing at the same time allowing units to run their own training exercises to maintain proficiency. ***FY 2023 Plans:*** Continued maturation of technologies with will be incorporated into TITAN operational prototypes. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 decrease represents transition of development of automated process technologies to the Prototype Maturation Phase and Project Linchpin.			
Title: Integration Space Based ISR ***Description:*** Fund initial efforts to integrate Space-Based Intelligence, Surveillance and Reconnaissance capabilities into TITAN program of record. ***FY 2024 Plans:*** Fund initial efforts to integrate Space-Based Intelligence, Surveillance and Reconnaissance capabilities into TITAN program of record. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 increase represents required funding for integration efforts providing Space Based ISR capabilities within the TITAN platform.	-	-	10.000
Title: Development and Prototyping of Critical RF Technologies (PMP) ***Description:*** Fund continued maturation, Prototyping and Advanced Development of TITAN critical technologies on a representative platform. Development and prototyping of critical RF technologies which currently do not exist or need significant enhancements to meet TITAN requirements. Fund technology maturation and prototyping of critical TITAN RF technologies including Multi-Link Antennas and CMOSS implementations. Multi-link RF systems will support the simultaneous ingest of multiple sensor data streams in a tactical ground configuration/footprint, for high altitude, aerial and terrestrial sensor data feeds. CMOSS implementations support Space, Weight and Power-Cooling (SWaP-C) reductions in an open architecture solution with modularity.	-	-	0.626

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604037A / *Tactical Intel Targeting Access Node (TITAN) Adv Dev*	**Project (Number/Name)** BY4 / *Tactical Intelligence Targeting Access Node*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
FY 2024 Plans: Continued maturation of multi-link antenna tech and CMOSS implementations on TITAN platform. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Transition of Critical RF Technology maturation from the Competitive Prototype Phase to TITAN's Prototype Maturation Phase			
Accomplishments/Planned Programs Subtotals	28.347	0.863	10.626

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• BY5: *Tactical Intelligence Targeting Access Node EMD*	54.972	108.987	132.136	-	132.136	160.716	49.883	36.804	40.533	0.000	584.031
• K57311: *TITAN GROUND STATION*	-	-	0.000	-	0.000	-	268.608	221.750	335.982	0.000	826.340

Remarks

0605148A BY5 funding supports development, integration and system engineering of TITAN prototypes.

D. Acquisition Strategy

The TITAN program acquisition strategy is to leverage Middle-Tier of Acquisition (MTA) for Rapid Prototyping (RP). This strategy allows the program to rapidly develop and field a capability that addresses gaps for multi-domain operations. TITAN's MTA RP approval in 3QFY22 was based on an Abbreviated CDD (A-CDD) with an Army Requirements Oversight Council (AROC) decision, which was approved in 1QFY22. 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 (RF) effort or tailored Milestone C (MS 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.

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 Competitive Prototyping Phase (CPP) was awarded in 3QFY22 and is focused on competitive prototyping between both vendors. The CPP includes further SW baseline refinement to ensure functionality and then begin Hardware (HW) integration within a shelter and on a representative vehicle platform for the Advanced variant. At the conclusion of Competitive Prototyping, both vendors will be evaluated against technical feasibility and ability to meet TITAN requirements,

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604037A / *Tactical Intel Targeting Access Node (TITAN) Adv Dev*	**Project (Number/Name)** BY4 / *Tactical Intelligence Targeting Access Node*

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 transition decision out MTA RP to MTA RF or MS C. 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. 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. Future FAR-based contracts will support both production and sustainment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604037A / *Tactical Intel Targeting Access Node (TITAN) Adv Dev*	Project (Number/Name) BY4 / *Tactical Intelligence Targeting Access Node*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development and Prototyping of Critical RF Technologies	C/FP	Contractors (Palantir and Raytheon) : PEO IEW&S (APG) and Contractor Facilities	-	15.721	Nov 2021	0.313	Jan 2023	-		-		-	0.000	16.034	-
Development and Prototyping of Critical RF Technologies in Prototype Maturation Phase	C/CPAF	Contractor (Pending Selection) : PEO IEW&S (APG) and Contractor Facility	-	-		-		0.626	Jan 2024	-		0.626	Continuing	Continuing	Continuing
		Subtotal	-	15.721		0.313		0.626		-		0.626	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development and Prototyping of Critical Automated Processing Technologies	C/FP	Contractors (Palantir and Raytheon) : Various: APG, Ft. Bragg, JBLM, YPG, CTR FAC	-	12.626	Nov 2021	0.550	Jan 2023	-		-		-	0.000	13.176	-
Integration Space Based ISR	TBD	Contractor (Pending Selection) : TBD	-	-		-		10.000	Jan 2024	-		10.000	Continuing	Continuing	Continuing
		Subtotal	-	12.626		0.550		10.000		-		10.000	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	28.347		0.863		10.626		-		10.626	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604037A / *Tactical Intel Targeting Access Node (TITAN) Adv Dev*	**Project (Number/Name)** BY4 / *Tactical Intelligence Targeting Access Node*

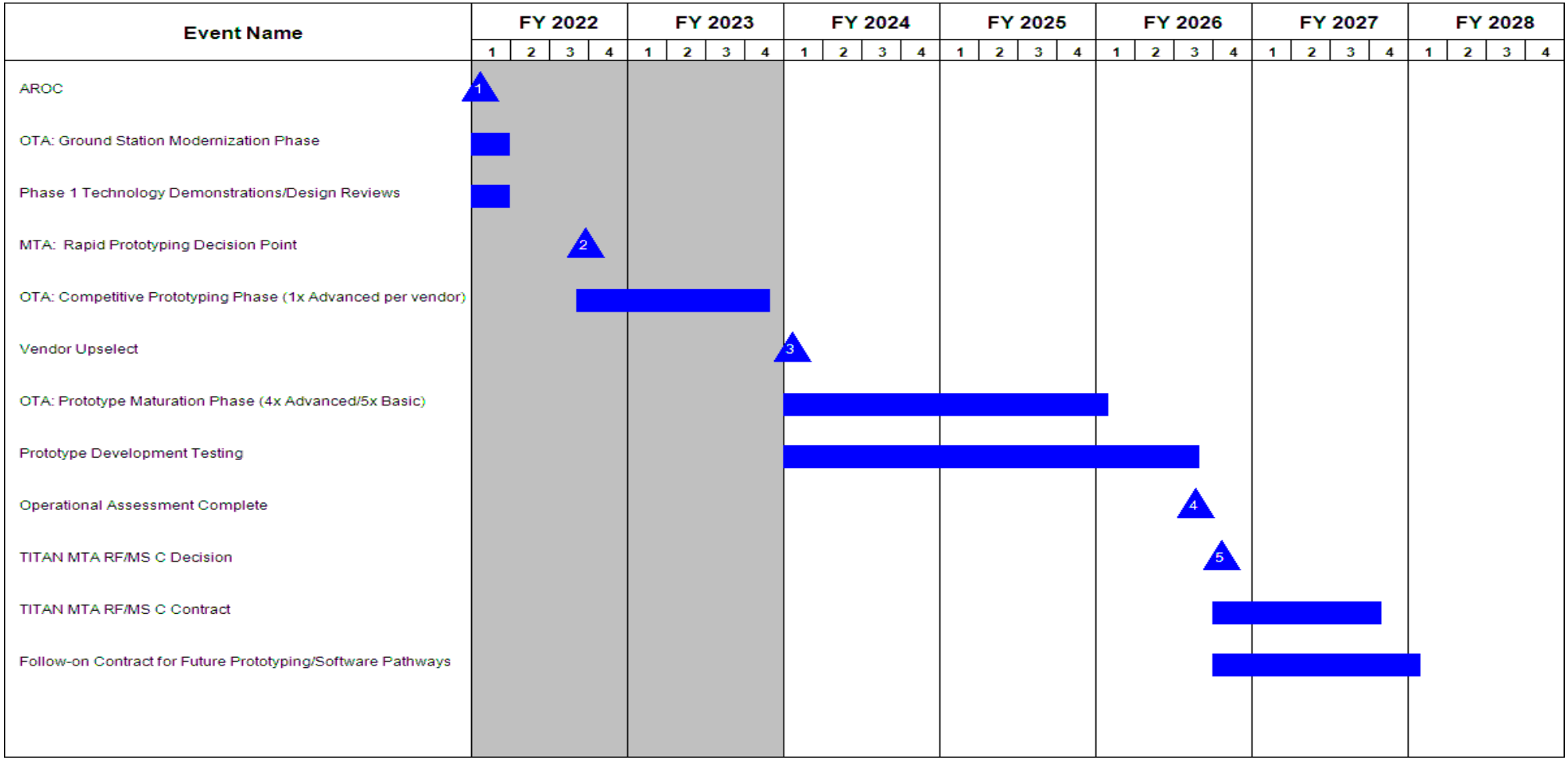

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604037A / *Tactical Intel Targeting Access Node (TITAN) Adv Dev*	**Project (Number/Name)** BY4 / *Tactical Intelligence Targeting Access Node*

Schedule Details

	Start		End	
Events	**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: Ground Station Modernization Phase	1	2021	1	2022
Phase 1 Technology Demonstrations/Design Reviews	1	2021	1	2022
MTA: Rapid Prototyping Decision Point	3	2022	3	2022
OTA: Competitive Prototyping Phase (1x Advanced per vendor)	3	2022	4	2023
Vendor Upselect	1	2024	1	2024
OTA: Prototype Maturation Phase (4x Advanced/5x Basic)	1	2024	1	2026
Prototype Development Testing	1	2024	3	2026
Operational Assessment Complete	3	2026	3	2026
TITAN MTA RF/MS C Decision	4	2026	4	2026
TITAN MTA RF/MS C Contract	4	2026	4	2027
Follow-on Contract for Future Prototyping/Software Pathways	4	2026	1	2028

Note

Schedule Detail notes.