Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
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 0604035A *I Low Earth Orbit (LEO) Satellite Capability*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	34.213	38.851	21.935	-	21.935	17.350	17.522	17.775	21.082	Continuing	Continuing
BX7: *Low Earth Orbit (LEO) Satellite Capability*	-	34.213	38.851	21.935	-	21.935	17.350	17.522	17.775	21.082	Continuing	Continuing

A. Mission Description and Budget Item Justification

The United States Army Tactical Space Strategy provides tactical land component forces with space-based capabilities required to close the top three Large Scale Combat Operations (LSCO) gaps and counter adversarial surveillance and reconnaissance systems that affect friendly maneuver forces. National, DoD, commercial space-based, and High Altitude (HA) sensor data will be integrated into army and Joint ground architectures to provide resilient communications, assured Positioning, Navigation, and Timing (PNT), all domain sensing capabilities (including space, high altitude, aerial and terrestrial sensors, data transport, data fusion, data analytics), automated Processing Exploitation and Dissemination (PED) required in the targeting process (target recognition, machine learning and advanced algorithm development), and provide command and control (C2) of non-kinetic fires for counter ISR capabilities to enable maneuver force operations. These capabilities will enable rapid and responsive all-domain targeting applications required to engage and defeat A2/AD forces and enable force projection and freedom of maneuver in contested Multi-Domain Operations and continue to inform the Army and Joint Services Family of Integrated Targeting Cells (FIT-C).

The LEO Satellite Capability is now called the LEO Battle Management Command, Control (BMC2) and Ground Infrastructure. The BMC2 and Ground Infrastructure will provide prototyping, experimentation, and risk reduction activities for ground architecture, supporting wide-area, responsive, and deep-area sensing required for Beyond-Line-of-Sight (BLOS) targeting and C2 of non-kinetic fires for counter ISR operations, significantly reducing Sensor to Shooter (S2S) timelines and enabling freedom of maneuver for operational forces. It will enable Warfighters at echelon to conduct C2 of counter surveillance and reconnaissance operations and to dynamically task, receive and disseminate data to directly support live-fire S2S demonstrations and assessments including Assured Positioning, Navigation, and Timing/s (APNT/S) Cross Functional Team (CFT) Campaign of Learning and Army Futures Command (AFC) Project Convergence- Capstone exercise.

FY2025 base funding in the amount of $ 21.935 million provides prototyping, experimentation, and risk reduction activities for the Army as it continues to develop and field prototypes to close the all domain sensing capability gap and provide C2 of counter adversarial surveillance and reconnaissance systems. Complimentary AI/ ML technologies are assessed via various prototyping and ground station (FIT-C) architecture efforts. These Advanced Component Development and Prototypes efforts enable ground stations to dynamically task, receive, and disseminate data to directly support live-fire, Warfighting function system of system demonstrations and assessments, enabling wide-area, responsive, and deep-area sensing and force maneuver. Additionally, this funding supports C2 architecture prototyping and experimentation of counter ISR capabilities, along with navigation warfare (NAVWAR) technology integration and Positioning, Navigation and Timing (PNT) technology development and assessments, including experimentation and prototyping in denied, degraded, intermittent, or limited (DDIL) operating environments.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army					Date: March 2024
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 0604035A *I Low Earth Orbit (LEO) Satellite Capability*			
B. Program Change Summary ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Previous President's Budget	35.509	38.851	22.457	-	22.457
Current President's Budget	34.213	38.851	21.935	-	21.935
Total Adjustments	-1.296	0.000	-0.522	-	-0.522
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.296	-			
• Adjustments to Budget Years	-	-	-0.522	-	-0.522

Change Summary Explanation

Army approved minor reduction.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*				Project (Number/Name) BX7 / *Low Earth Orbit (LEO) Satellite Capability*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
BX7: *Low Earth Orbit (LEO) Satellite Capability*	-	34.213	38.851	21.935	-	21.935	17.350	17.522	17.775	21.082	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Name of this Project from 'Low Earth Orbit (LEO) Satellite Capability' to 'Battle Management Command and Control (BMC2) and Ground Infrastructure for FY22 and beyond.'

A. Mission Description and Budget Item Justification

The United States Army Tactical Space Strategy provides tactical land component forces with space-based capabilities required to close the top three Large Scale Combat Operations (LSCO) gaps and counter adversarial surveillance and reconnaissance systems that affect friendly maneuver forces. National, DoD, commercial space-based, and High Altitude (HA) sensor data will be integrated into army and Joint ground architectures to provide resilient communications, assured Positioning, Navigation, and Timing (PNT), all domain sensing capabilities (including space, high altitude, aerial and terrestrial sensors, data transport, data fusion, data analytics), automated Processing Exploitation and Dissemination (PED) required in the targeting process (target recognition, machine learning and advanced algorithm development), and provide command and control (C2) of non-kinetic fires for counter ISR capabilities to enable maneuver force operations. These capabilities will enable rapid and responsive all-domain targeting applications required to engage and defeat A2/AD forces and enable force projection and freedom of maneuver in contested Multi-Domain Operations and continue to inform the Army and Joint Services Family of Integrated Targeting Cells (FIT-C).

The LEO Satellite Capability is now called the LEO Battle Management Command, Control (BMC2) and Ground Infrastructure. The BMC2 and Ground Infrastructure will provide prototyping, experimentation, and risk reduction activities for ground architecture, supporting wide-area, responsive, and deep-area sensing required for Beyond-Line-of-Sight (BLOS) targeting and C2 of non-kinetic fires for counter ISR operations, significantly reducing Sensor to Shooter (S2S) timelines and enabling freedom of maneuver for operational forces. It will enable Warfighters at echelon to conduct C2 of counter surveillance and reconnaissance operations and to dynamically task, receive and disseminate data to directly support live-fire S2S demonstrations and assessments including Assured Positioning, Navigation, and Timing/s (APNT/S) Cross Functional Team (CFT) Campaign of Learning and Army Futures Command (AFC) Project Convergence- Capstone exercise

FY2025 base funding in the amount of $21.935 million provides prototyping, experimentation, and risk reduction activities for the Army as it continues to develop and field prototypes to close the all domain capability gap and provide C2 of counter adversarial surveillance and reconnaissance systems. Complimentary AI/ML technologies are assessed via various prototyping and ground station (FIT-C) architecture efforts. These Advanced Component Development and Prototypes efforts enable ground stations to dynamically task, receive, and disseminate data to directly support live-fire, Warfighting function system of system demonstrations and assessments, enabling wide-area, responsive, and deep-area sensing and force maneuver. Additionally, this funding supports C2 architecture prototyping and experimentation of counter ISR capabilities, along with navigation warfare (NAVWAR) technology integration and Positioning, Navigation and Timing (PNT) technology development and assessments, including experimentation and prototyping in denied, degraded, intermittent, or limited (DDIL) operating environments.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*	**Project (Number/Name)** BX7 / *Low Earth Orbit (LEO) Satellite Capability*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: LEO Satellite Capability	34.213	38.851	21.935

Description: The United States Army Tactical Space Strategy provides tactical land component forces with space-based capabilities required to close the top three Large Scale Combat Operations (LSCO) gaps and counter adversarial surveillance and reconnaissance systems that affect friendly maneuver forces. National, DoD, commercial space-based, and High Altitude (HA) sensor data will be integrated into army and Joint ground architectures to provide resilient communications, assured Positioning, Navigation, and Timing (PNT), all domain capabilities (including space, high altitude, aerial and terrestrial sensors, data transport, data fusion, data analytics), automated Processing Exploitation and Dissemination (PED) required in the targeting process (target recognition, machine learning and advanced algorithm development), and provide command and control (C2) of non-kinetic fires for counter ISR capabilities to enable maneuver force operations. These capabilities will enable rapid and responsive all-domain targeting applications required to engage and defeat A2/AD forces and enable force projection and freedom of maneuver in contested Multi-Domain Operations and continue to inform the Army and Joint Services Family of Integrated Targeting Cells (FIT-C).

The LEO Satellite Capability is now called the LEO Battle Management Command, Control (BMC2) and Ground Infrastructure. The BMC2 and Ground Infrastructure will provide prototyping, experimentation, and risk reduction activities for ground architecture, supporting wide-area, responsive, and deep-area sensing required for Beyond- Line-of-Sight (BLOS) targeting and C2 of non-kinetic fires for counter ISR operations, significantly reducing Sensor to Shooter (S2S) timelines and enabling freedom of maneuver for operational forces. It will enable Warfighters at echelon to conduct C2 of counter surveillance and reconnaissance operations and to dynamically task, receive and disseminate data to directly support live-fire S2S demonstrations and assessments including Assured Positioning, Navigation, and Timing/s (APNT/S) Cross Functional Team (CFT) Campaign of Learning and Army Futures Command (AFC) Project Convergence-Capstone exercise.

FY 2024 Plans:
Battle Management and Control (BMC2) and ground infrastructure continues the demonstration and validation of ground architecture, evaluating the ability to provide wide-area, responsive, and deep-area sensing required for Beyond Line of Sight (BLOS) targeting and force maneuver, significantly reducing Sensor-to-Shooter (S2S) timelines. Ground architecture is evaluated through multiple assessment events including the Assured Position, Navigation, Timing and Space (APNT/S) Cross Functional Team (CFT) Campaign of Learning and Army Futures Command's Project Convergence. These provide a realistic operational environment to evaluate the integrated Intelligence, Surveillance and Reconnaissance (ISR), Positioning, Navigation and Timing (PNT), BMC2, and communications data to identify and locate targets of interest in denied and contested environments actionable by the tactical warfighter. This is executed through the S2S demonstration and experimentation plan which began with the first Positioning, Navigation and Timing (PNT) Assessment Exercise (PNTAX) in FY19. PNTAX provides the Army's sole large scale, open air, threat informed Radio Frequency/Global Positioning System denied environment for assessments and experiments

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*	**Project (Number/Name)** BX7 / *Low Earth Orbit (LEO) Satellite Capability*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
necessary to ensure evolution of Multi-Domain Operations and Joint All Domain Command and Control (JADC2) capabilities. Further, APNT/S CFT conducts multiple CONUS-based live-fire exercises along with follow-on embedded experimentation in exercises across US Army Europe- African Command (USEUR-AF) and US Army Pacific Command (USARPAC), culminating with a FY 2024 Project Convergence exercise. Critical to this overall effort are Soldier touchpoints, prototyping and ground architecture development, Artificial Intelligence and machine learning integration, S2S demonstrations to inform space, high altitude, aerial and terrestrial based sensor development, space-based telemetry, Alternative Navigation and radio frequency sensing. This demonstration and experimentation cycle is extremely important as it is the Army's mechanism to ensure current and future funding is correctly applied against the most critical requirements. It provides an iterative framework for rapid concept of operations and tactics, techniques, and procedures development, evaluation and revision and for rapid technology insertion.			
FY 2025 Plans: Battle Management and Control (BMC2) and ground infrastructure continues the demonstration and validation of ground architecture, evaluating the ability to provide wide-area, responsive, and deep-area sensing required for Beyond Line of Sight (BLOS) targeting and force maneuver, significantly reducing Sensor-to-Shooter (S2S) timelines. Ground architecture is evaluated through multiple assessment events including the Assured Position, Navigation, Timing and Space (APNT/S) Cross Functional Team (CFT) Campaign of Learning and Army Futures Command's Capstone Exercise. These provide a realistic operational environment to evaluate the integrated Intelligence, Surveillance and Reconnaissance (ISR), Positioning, Navigation and Timing (PNT), BMC2, and communications data to identify and locate targets of interest in denied and contested environments actionable by the tactical warfighter. This is executed through the S2S demonstration and experimentation plan which began with the first Positioning, Navigation and Timing (PNT) Assessment Exercise (PNTAX) in FY19. PNTAX provides the Army's sole large scale, open air, threat informed Radio Frequency/Global Positioning System denied environment for assessments and experiments necessary to ensure evolution of Multi-Domain Operations and Joint All Domain Command and Control (JADC2) capabilities. Further, APNT/S CFT conducts multiple CONUS-based live-fire exercises along with follow-on embedded experimentation in exercises across US Army Europe- African Command (USEUR-AF) and US Army Pacific Command (USARPAC), culminating with a FY 2025 Capstone exercise. Critical to this overall effort are Soldier touchpoints, prototyping and ground architecture development, Artificial Intelligence and machine learning integration, all-domain targeting demonstrations to inform space, high altitude, aerial and terrestrial based sensor development, space-based telemetry, Alternative Navigation and radio frequency sensing. This demonstration and experimentation cycle is extremely important as it is the Army's mechanism to ensure current and future funding is correctly applied against the most critical requirements. It provides an iterative framework for rapid concept of operations and tactics, techniques, and procedures development, evaluation and revision and for rapid technology insertion.			
FY 2024 to FY 2025 Increase/Decrease Statement: Resource requirements decrease in FY25 because the majority of the planned materiel development of the S2S forward prototyping efforts (ATHENA) complete in FY24. The prototyping effort continues throughout the FYDP utilizing the materiel			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*	**Project (Number/Name)** BX7 / *Low Earth Orbit (LEO) Satellite Capability*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
investment to date by experimenting with PED and AI/ML technologies to inform All domain sensing and Long Range precision effects capability development." FY25 increase $.044M due to inflation adjustment.			
Accomplishments/Planned Programs Subtotals	34.213	38.851	21.935

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• 0603766A: *Tactical Electronic Surveillance System - Adv Dev*	72.364	65.567	90.265	-	90.265	63.649	48.625	53.954	49.333	Continuing	Continuing

Remarks

Development by Project BX7 'LEO Battle Command and Control (BMC2) and Ground Infrastructure' is in conjunction and complement Project CC5 'LEO ISR'. ref. PE 0603766A.CC5

D. Acquisition Strategy

The Army signed a Memorandum of Agreement (MOA) with the Mission Partner on November 19, 2019. This relationship has shown promise to build and deliver capacity for the Army. The MOA will allow the Army to leverage orbit experimental ISR satellites that will accelerate the Army's development of Concept of Operations (CONOPs), Tactics, Techniques and Procedures (TTPs), and refine requirements necessary to mitigate the deep-sensing gap, shorten the S2S timeline and improve situational awareness for Warfighters at both the operational and tactical levels.

This funding will enable the Army to utilize on-orbit demonstrations and numerous large-scale exercises within United States European Command (EUCOM) and U.S. Indo-Pacific Command (INDOPACOM) areas of responsibility (AORs). These demonstrations will help define the Army's tactical requirements, CONOPs, and TTPs for leveraging on-demand/direct link theater access, at echelon, to space-based ISR capabilities with trained/certified Soldiers. This will turn previously "opportunistic" collection into "assured" collection to support dynamic targeting and enhanced situational awareness. It will enable ground stations to dynamically task, receive and disseminate data to directly support live-fire S2S demonstrations and assessments including Assured Position, Navigation, Timing (APNT) Cross Functional Team (CFT) Campaign of Learning and AFC Project Convergence. Existing Mission Partner contracts and Aviation & Missile Technology Consortium (AMTC) OTAs will be used for Prototype Development, Engineering Services and Test and Evaluation Support.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*	Project (Number/Name) BX7 / *Low Earth Orbit (LEO) Satellite Capability*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Development and Engineering Services Support	C/FFP	Multiple : Multiple	3.214	7.750	Oct 2022	6.600	Dec 2023	4.200	Dec 2024	-		4.200	0.000	21.764	-
		Subtotal	3.214	7.750		6.600		4.200		-		4.200	0.000	21.764	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LEO Satellite Infrastructure Capabilities Development	C/FPIF	Multiple : Multiple	25.808	22.098	Jan 2023	27.280	Jan 2024	13.535	Jan 2025	-		13.535	0.000	88.721	Continuing
		Subtotal	25.808	22.098		27.280		13.535		-		13.535	0.000	88.721	N/A

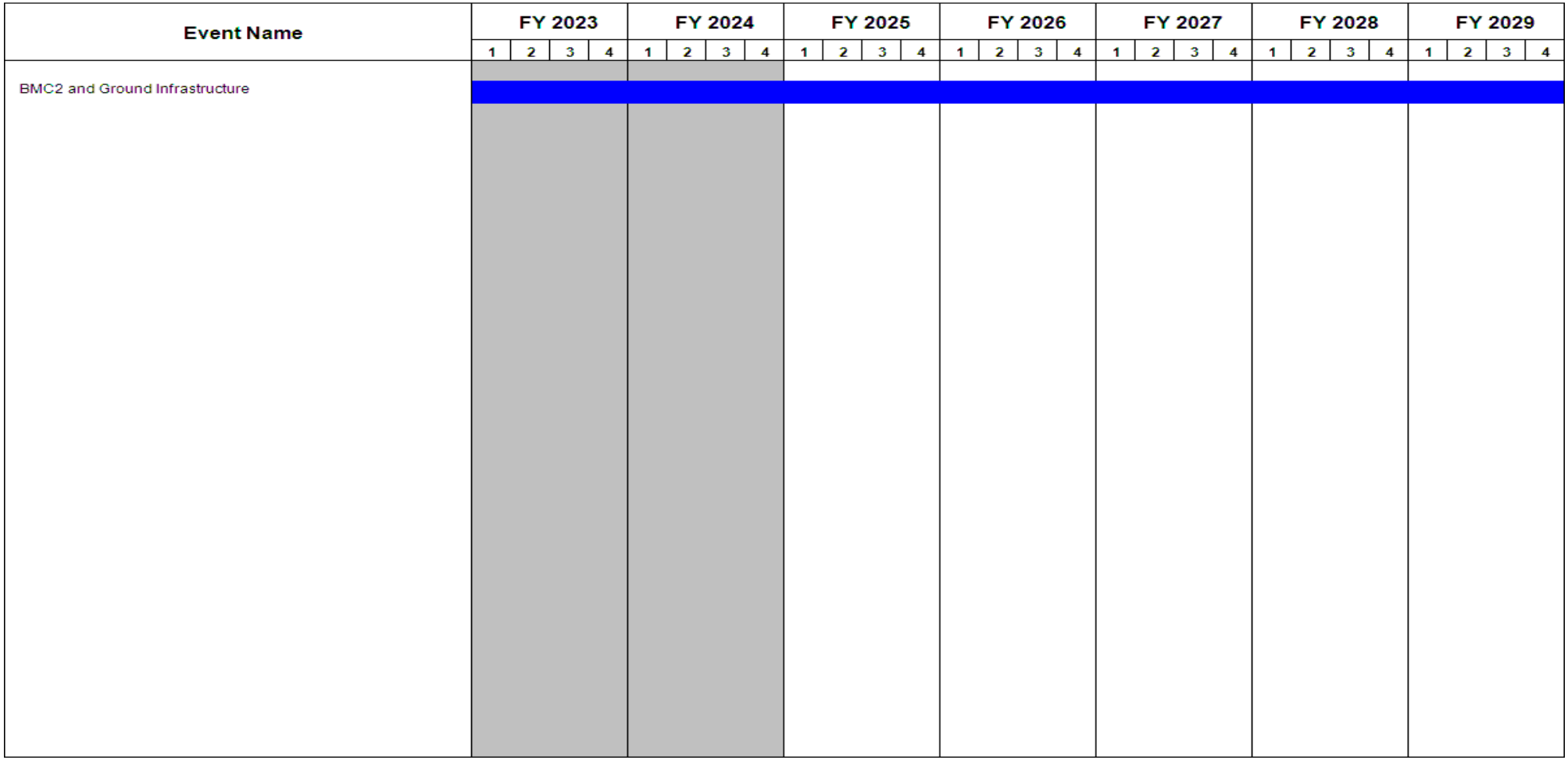
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LEO Infrastructure Test and Evaluation	C/CPIF	Multiple : Multiple	4.000	4.365	Jan 2023	4.971	Jan 2024	4.200	Jan 2025	-		4.200	0.000	17.536	-
		Subtotal	4.000	4.365		4.971		4.200		-		4.200	0.000	17.536	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.022	34.213		38.851		21.935		-		21.935	0.000	128.021	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*	**Project (Number/Name)** BX7 / *Low Earth Orbit (LEO) Satellite Capability*



Note

LEO activities transitioned to this PE 0604035A Project BX7 in FY2022 from previous PE 1206308A, Project FE5 Space And Missile Defense Integration.

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*	**Project (Number/Name)** BX7 / *Low Earth Orbit (LEO) Satellite Capability*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BMC2 and Ground Infrastructure	1	2021	4	2029