Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army											Date: February 2020	
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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	22.678	-	22.678	19.881	18.084	27.175	15.986	0.000	103.804
BX7: *Low Earth Orbit (LEO) Satellite Capability*	-	0.000	0.000	22.678	-	22.678	19.881	18.084	27.175	15.986	0.000	103.804

A. Mission Description and Budget Item Justification

The US Army Tactical Space Strategy provides Tactical Land Component Forces with space capabilities required to enable force projection and maneuver during Multi-Domain Operations. US Army space-based sensors will integrate with commercial and national systems to provides resilient communications, assured PNT and deep sensing capabilities required in the targeting process to enable rapid and responsive sensor-to-shooter applications required to engage and defeat Anti-Access/Area Denial (A2/AD) forces and enable force projection and maneuver in contested Multi-Domain Operations

The LEO Satellite Capability will provide prototyping, development and experimentation of the Tactical Space Layer (TSL) sensors which are designed to provide wide-area, responsive deep area sensing required for beyond line of sight (BLOS) targeting and force maneuver, significantly reducing Sensor to Shooter (S2S) timelines. Follow-on persistent prototype tactical sensor capabilities will be operational in FY 2021/2022 and will be integrated with the Army Tactical Intelligence Targeting Access Node (TITAN) ground station to tactically task, receive and disseminate data to directly support live-fire S2S demonstrations and assessments.

All FY 2020 adjustments align program financial structure to Army Modernization Priorities in support of the National Defense Strategy. Work in this Project complements and is fully coordinated with PE 633463 (Tag, Track and Locate). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the United States Army Space and Missile Defense Command/Army Forces Strategic Command in Huntsville, AL. FY 2020 realignments are due to financial restructuring in support of Army Modernization Priorities.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	22.678	-	22.678
Total Adjustments	0.000	0.000	22.678	-	22.678
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	22.678	-	22.678

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
BX7: *Low Earth Orbit (LEO) Satellite Capability*	-	0.000	0.000	22.678	-	22.678	19.881	18.084	27.175	15.986	0.000	103.804
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In Fiscal Year (FY) 2021, Project BX7 Low Earth Orbit (LEO) Satellite Capability transitioned from Program Element (PE) 1206308A, Project FE5 Space And Missile Defense Integration.

A. Mission Description and Budget Item Justification

The US Army Tactical Space Strategy provides Tactical Land Component Forces with space capabilities required to enable force projection and maneuver during Multi-Domain Operations. US Army space-based sensors will integrate with commercial and national systems to provides resilient communications, assured PNT and deep sensing capabilities required in the targeting process to enable rapid and responsive sensor-to-shooter applications required to engage and defeat Anti-Access/Area Denial (A2/AD) forces and enable force projection and maneuver in contested Multi-Domain Operations

The LEO Satellite Capability will provide prototyping, development and experimentation of the Tactical Space Layer (TSL) sensors which are designed to provide wide-area, responsive deep area sensing required for beyond line of sight (BLOS) targeting and force maneuver, significantly reducing Sensor to Shooter (S2S) timelines. Follow-on persistent prototype tactical sensor capabilities will be operational in FY 2021/2022 and will be integrated with the Army Tactical Intelligence Targeting Access Node (TITAN) ground station to tactically task, receive and disseminate data to directly support live-fire S2S demonstrations and assessments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: LEO Satellite Capability	-	-	17.678
Description: A dedicated constellation of small satellites to provide resilient, persistent LEO capability to address shortfalls in current reconnaissance, surveillance, and target acquisition (RSTA) and PNT systems. Provides the ability to identify and locate targets of interest in denied and contested environments actionable to the tactical warfighter. This includes the Battle Management, Command and Communication (BMC2) capability required to task payloads and fuse data, as well as algorithms to enhance, analyze, and disseminate this data to the tactical warfighter via existing Army systems and networks in support of Sensor-to-Shooter demonstrations directly supporting Long Range Precision Fires (LRPF).			
FY 2021 Plans: LEO Satellite Capability			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021
Begin validation of demonstration constellation in a realistic operational environment. Evaluate the integrated RSTA, PNT, BMC2, and communications technologies to identify and locate targets of interest in denied and contested environments actionable to the tactical warfighter. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** All FY 2020 adjustments align program financial structure to Army Modernization Priorities in support of the National Defense Strategy. Work in this Project complements and is fully coordinated with PE 633463 (Tag, Track and Locate). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the United States Army Space and Missile Defense Command/Army Forces Strategic Command in Huntsville, AL. FY 2020 realignments are due to financial restructuring in support of Army Modernization Priorities.			
Title: APNT Integrated Space Communications ***Description:*** Development of a unique advanced space communications capability to explore advanced ground based space communications technologies and concepts utilizing bi-static Radio Frequency (RF) scattering and propagation with precision frequency, phase, and power management. This space communications capability will develop and demonstrate multiple advanced Army LEO space communications concepts and will also assess interfacing with multiple Joint Service space communication missions ***FY 2021 Plans:*** Assess performance of space communications capabilities of multiple advanced Army LEO space communications concepts and interfacing with multiple Joint Services. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** All FY 2020 adjustments align program financial structure to Army Modernization Priorities in support of the National Defense Strategy. Work in this Project complements and is fully coordinated with PE 633463 (Tag, Track and Locate). The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the United States Army Space and Missile Defense Command/Army Forces Strategic Command in Huntsville, AL. FY 2020 realignments are due to financial restructuring in support of Army Modernization Priorities.	-	-	5.000
Accomplishments/Planned Programs Subtotals	-	-	22.678

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Gov/SETA Support LEO	TBD	Multiple : Multiple Locations	-	-		-		3.000	Oct 2020	-		3.000	0.000	3.000	Continuing
Matrix Gov/SETA Support APNT Integrated Space Communications	TBD	Multiple : Multiple Locations	-	-		-		1.000	Oct 2020	-		1.000	0.000	1.000	Continuing
		Subtotal	-	-		-		4.000		-		4.000	0.000	4.000	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LEO Satellite Capability	Various	Multiple : Multiple	-	-		-		14.678	Feb 2021	-		14.678	0.000	14.678	Continuing
APNT Integrated Space Communications	MIPR	Classified : Classified	-	-		-		4.000	Jan 2021	-		4.000	0.000	4.000	Continuing
		Subtotal	-	-		-		18.678		-		18.678	0.000	18.678	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		22.678		-		22.678	0.000	22.678	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
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*

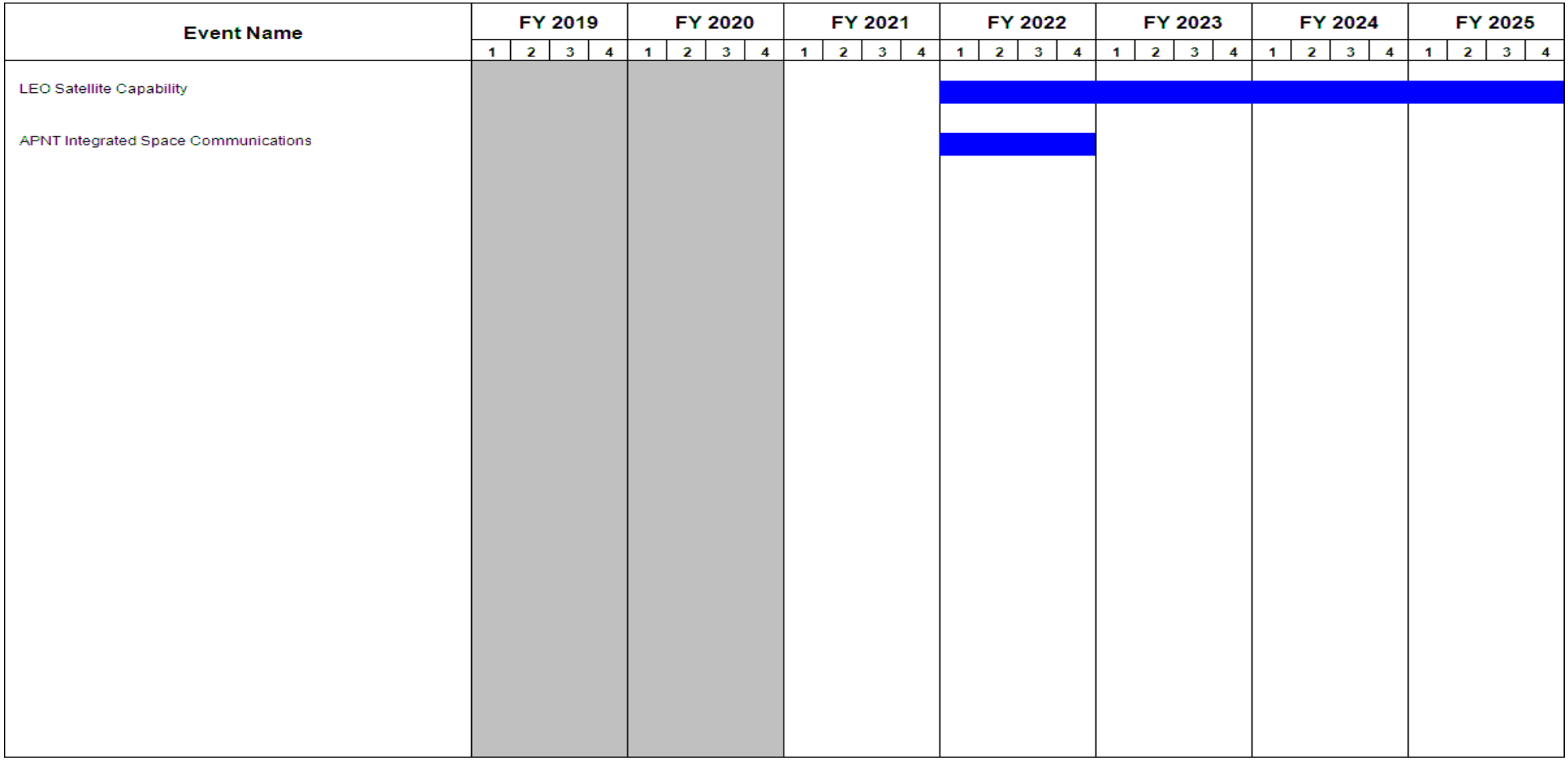

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604035A / *Low Earth Orbit (LEO) Satellite Capability*	**Project (Number/Name)** BX7 / *Low Earth Orbit (LEO) Satellite Capability*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
LEO Satellite Capability	1	2022	4	2025
APNT Integrated Space Communications	1	2022	4	2022