Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army											Date: May 2021	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*							
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	-	18.432	59.755	75.520	-	75.520	-	-	-	-	-	-
CK3: *TLS Echelon Above Brigade (EAB)*	-	-	-	19.505	-	19.505	-	-	-	-	-	-
EW5: *Electronic Warfare Development*	-	11.001	12.597	-	-	-	-	-	-	-	-	-
EW6: *ARAT-TSS*	-	7.431	9.053	5.391	-	5.391	-	-	-	-	-	-
FJ5: *Terrestrial Layer System*	-	-	38.105	50.624	-	50.624	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element encompasses engineering and manufacturing development for tactical Electronic Warfare (EW) terrestrial (ground) employment applications. The systems under this program provide the Army with the capability to detect, identify, locate, collect/process, report, and engage (disrupt, degrade or deny) hostile forces to prevent their effective use of communications & non-communications networks, counter-mortar/counter-battery radars, surveillance radars, electronically fused munitions and other enemy threats using the Electro-Magnetic Spectrum (EMS).

Project CK3 supports the development of the Program of Record, Terrestrial Layer System (TLS) Echelons Above Brigade (EAB). TLS-EAB will provide Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyber-enabling integrated solution to support Multi Domain Battle capability gaps and provide Force Protection, Situational Development, and Information Superiority to Army Divisions, Corps and Multi-Domain Task Forces.

Project EW5 provides for Prophet Enhanced, the current system under the Prophet Ground acquisition program. Its primary mission is to provide 24-hour Situation Development and Information Superiority to the supported maneuver brigade enabling the most effective engagement of enemy forces. Prophet Enhanced provides a modular, scalable, open architecture based system solution optimized for ease of use in a variety of configurations.

Project EW6 provides for the Army Reprogramming Analysis Team (ARAT), a Department of the Army established project to develop techniques, methods, tools and architecture to reprogram mission software embedded in Army EW systems, Force Protection Systems (FPS), and Target Sensing Systems (TSS) in response to changes in threat signatures. ARAT Research and Development enables continuous development of: 1) automated threat analysis tools to rapidly detect (flag) threat changes within intelligence systems, 2) tools to minimize the time to develop EW Mission Software and Products (MSP) for both air and ground EW systems, 3) tools and technology to minimize the time required to test and validate MSPs, 4) improved communications conduits to transmit mission software changes to field users, and 5) enhanced mission-software uploading tools. These efforts allow for rapid threat analysis, simulation, mission software development, distribution and uploading of mission software changes directly to the supported Soldier in the field. The ARAT project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army	Date: May 2021
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0304270A *I Electronic Warfare Development*

Project FJ5 supports the development of the Program of Record, Terrestrial Layer System (TLS), an effort that initiated in FY 2020 (funded with PE 0604021A / AW7). TLS will provide Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyber-enabling integrated solution to support Multi Domain Battle capability gaps and provide Force Protection, Situational Development, and Information Superiority to the maneuver forces.

FY 2022 funds the Terrestrial Layer System (TLS) Echelons Above Brigade (EAB) efforts (Project CK3), Army Reprogramming Analysis Team (ARAT) efforts (Project EW6) and Terrestrial Layer System (TLS) efforts (Project FJ5).

B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	18.432	59.755	66.861	-	66.861
Current President's Budget	18.432	59.755	75.520	-	75.520
Total Adjustments	0.000	0.000	8.659	-	8.659
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	8.659	-	8.659

Change Summary Explanation

FY2022 PE 0304270A Project CK3 increase of $19.505 million to support TLS Echelons Above Brigade (EAB); FY2022 realignment (decrease) of $6.212 million from PE 0304270A Project EW5 (BA5) to PE 0607313A Project CE2 (BA7); FY2022 PE 0304270A Project EW6 decreased $4.008 million; FY2022 PE 0304270A Project FJ5 decreased $0.626 million.

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 0304270A / *Electronic Warfare Development*	Project (Number/Name) CK3 / *TLS Echelon Above Brigade (EAB)*	

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
CK3: *TLS Echelon Above Brigade (EAB)*	-	-	-	19.505	-	19.505	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This is a new start in FY 2022.

A. Mission Description and Budget Item Justification

The Terrestrial Layer System (TLS) Echelons Above Brigade (EAB) Program of Record will provide Army Divisions, Corps and Multi-Domain Task Forces (MDTF) extended range, integrated full spectrum Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyber-enabling non-kinetic offensive capabilities to support large scale combat operations. TLS EAB's information Superiority provides Indications and Warnings, Force Protection and Situational Awareness to influence the commander's decision cycle, improve targeting timeliness and accuracy, and provides electronic attack and offensive cyber warfare options to deny, degrade, disrupt, or otherwise manipulate the targeted force. TLS EAB employs technologically advanced systems with a modular open-system approach for multiple configurations that can be efficiently sustained and effectively upgraded to provide capabilities against changing near peer and emerging threats to address joint all domain capability gaps.

Justification:
FY2022 Base funding in the amount of $19.505 million funds platform integration and system level prototyping for TLS variants that will be fielded to Echelons Above Brigade (EAB).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: TLS EAB Integration	-	-	19.505
Description: TLS Echelons Above Brigade (EAB) will be a new Program in FY2022, fulfilling distinct capabilities to support Division, Corps and Multi-Domain Task Force commanders. TLS EAB will be integrated onto different prime mover platforms than TLS Brigade Combat Team (BCT) and will employ different technologies and hardware to fulfill the unique extended range capabilities to support large scale combat operations. ***FY 2022 Plans:*** Initiates development of System Level Prototypes and integration of TLS EAB mission equipment. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 is first year of funding for this new start requirement.			
Accomplishments/Planned Programs Subtotals	-	-	19.505

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** CK3 / *TLS Echelon Above Brigade (EAB)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

A competitive acquisition approach is planned for TLS EAB development. The TLS EAB program will use a tailored acquisition approach to rapidly deliver an integrated ground intelligence, electronic warfare and cyber capability on multiple platform types to align with maneuver forces. The TLS EAB program will leverage authorities to accelerate delivery through rapid prototyping with rapid fielding approaches or a Milestone C Decision Point.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** CK3 / *TLS Echelon Above Brigade (EAB)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TLS EAB Integration	C/TBD	TBD : TBD	-	-		-		19.505	Feb 2022	-		19.505	0.000	19.505	-
		Subtotal	-	-		-		19.505		-		19.505	0.000	19.505	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		19.505		-		19.505	0.000	19.505	N/A

Remarks

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** CK3 / *TLS Echelon Above Brigade (EAB)*

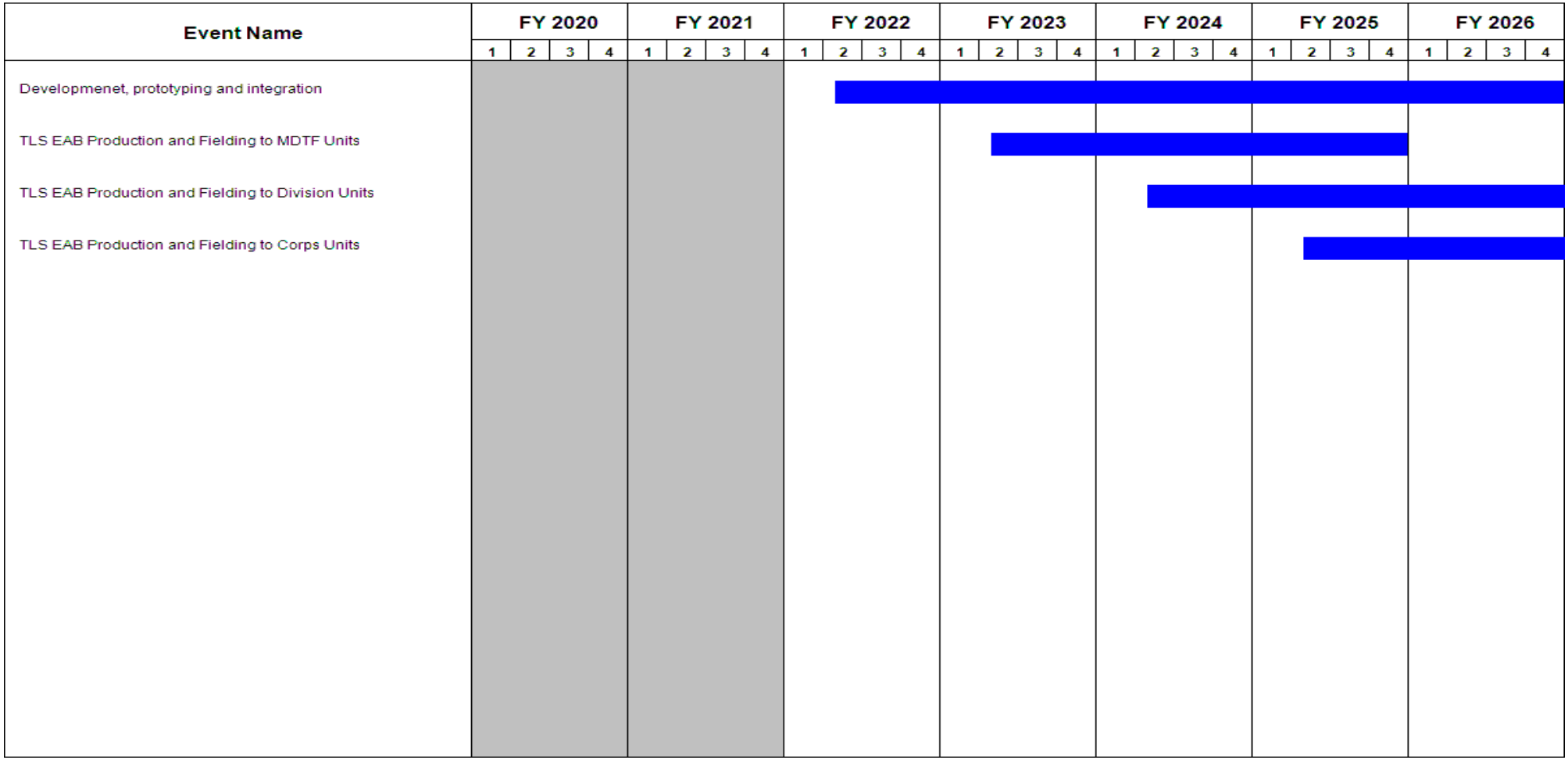

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** CK3 / *TLS Echelon Above Brigade (EAB)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Developmenet, prototyping and integration	2	2022	4	2026
TLS EAB Production and Fielding to MDTF Units	2	2023	4	2025
TLS EAB Production and Fielding to Division Units	2	2024	4	2027
TLS EAB Production and Fielding to Corps Units	2	2025	4	2027

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 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development*	

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
EW5: *Electronic Warfare Development*	-	11.001	12.597	-	-	-	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

PE 0304270A Project EW5 has no FY2022 funding request; FY2022 funding realigned to 677313CE2.

A. Mission Description and Budget Item Justification

Prophet Enhanced is the current system under the Prophet Ground acquisition program. Funds provide for development and integration of Technical Insertion upgrades for Next Generation Signals and state-of-the-art Signals Intelligence (SIGINT) exploitation techniques to increase the capabilities of the Prophet Enhanced and maintain operational relevance. The Prophet Enhanced is the tactical commander's organic ground-based SIGINT/Electronic Warfare system for the Multi-Function Teams (MfTs) organic to the Brigade Combat Teams (BCTs) and Expeditionary-Military Intelligence Brigades (E-MIBs). Its primary mission is to provide 24-hour Situation Development and Information Superiority to the supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet Enhanced provides a modular, scalable, open architecture-based system solution optimized for ease of use in a variety of configurations. It also incorporates product modification, integration, evaluation and demonstration events of equipment for rapid integration of Technical Insertions (TI) and product development to ensure operational relevance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Program Management ***Description:*** Engineering, technical and programmatic oversight of the development of next generation signals. ***FY 2021 Plans:*** Funds will provide for matrix and contractor system engineering and program management support for the Prophet program. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Funding realigned to PE 0607313A CE2.	0.450	0.450	-
Title: Signal of Interest upgrades ***Description:*** The Signal Environment that Prophet Systems exploit is constantly contested with evolving threats. This environment creates gaps in Prophet?s ability to collect and exploit these signals. Prophet must integrate the latest emerging Intelligence Community (IC) and commercial solutions upgrades to remain relevant against these numerous, key, and high-priority emerging threats. ***FY 2021 Plans:***	4.024	8.647	-

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Continuing, but not limited to development and evaluation of Next Generation SIGINT capabilities into the Prophet SIGINT Software (PS2). The new signals and libraries of signals address key exploitation gaps in the Prophet system's ability to collect against key tactical near peer signals and emerging threats. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Funding realigned to PE 0607313A CE2.			
Title: Proficiency Trainer and Target Signature Arrays ***Description:*** The Proficiency Trainer and Target Signature Arrays are required to conduct training to sustain operator proficiency on the Prophet Enhanced at the unit level after the system has been fielded and post New Equipment Training (NET) training.	2.000	-	-
Title: Enhanced Signal Processing and Line of Sight Testing ***Description:*** Testing required of the Enhanced Signal Processing kit and Line of Sight Communications kit onto the Prophet Enhanced system. ***FY 2021 Plans:*** Combined testing of the Enhanced Signal Processing kit and Line of Sight Communication kit. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Funding realigned to PE 0607313A CE2.	1.044	0.200	-
Title: Enhanced Signal Processing Integration & Development ***Description:*** Effort to integrate the Enhanced Signal Processing kit into the Prophet Enhanced system. ***FY 2021 Plans:*** Development and evaluation of the Enhanced Signal Processing capability. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Funding realigned to PE 0607313A CE2.	3.483	0.550	-
Title: Customer Testing ***Description:*** Customer Testing of the Prophet Enhanced system as a result of changes to the baseline. ***FY 2021 Plans:***	-	0.785	-

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Customer Testing of the Prophet System baseline after transition to sustainment to support and maintain the PE System Full Material Release ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Funding realigned to PE 0607313A CE2.			
Title: Technical Data Package ***Description:*** Technical Data Package (TDP) for Prophet Enhanced, to be used for sustainment support as well as for follow on systems ***FY 2021 Plans:*** Develop Technical Data Package (TDP) for Prophet Enhanced ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Funding realigned to PE 0607313A CE2.	-	1.965	-
Accomplishments/Planned Programs Subtotals	11.001	12.597	-

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
• BZ9753: *PROPHET ENHANCED MODIFICATIONS*	57.103	78.529	35.300	-	35.300	-	-	-	-	-	-
• BZ9751: *SPECIAL PURPOSE SYSTEMS*	4.000	48.979	3.739	-	3.739	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

The Prophet Research and Development (R&D) Acquisition Strategy is structured to maintain operational relevancy of Prophet Enhanced systems in a dynamic threat environment while reducing risk and streamlining business and engineering processes. Contracting activities are to maintain SIGINT relevance and complete Technical Insertion (TI) to Prophet Enhanced systems to pursue the latest Signals of Interest and design against obsolescence. The Technical Insertion (TI) contract supports R&D and other developmental work.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PM Electronic Warfare & Cyber : APG, MD	1.611	0.450	Dec 2019	0.450	Dec 2020	-		-		-	Continuing	Continuing	Continuing
		Subtotal	1.611	0.450		0.450		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Signals of Interst Upgrade	SS/CPFF	GD Mission Systems : Scottsdale, AZ	4.093	4.024	Jan 2020	8.647	Jan 2021	-		-		-	Continuing	Continuing	Continuing
Trainer/TSA	SS/ Various	GD Mission Systems and Various Supporting Organizations : Scottsdale, AZ	-	2.000	Jan 2020	-		-		-		-	0.000	2.000	-
Enhanced Signal Processing Integration, Development & Evaluation	SS/CPFF	GD Mission Systems : Scottsdale, AZ	-	3.483	Jan 2020	0.550	Jan 2021	-		-		-	Continuing	Continuing	Continuing
		Subtotal	4.093	9.507		9.197		-		-		-	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Data Package	SS/CPFF	GD Mission Systems : Scottsdale, AZ	-	-		1.965	Mar 2021	-		-		-	0.000	1.965	-
		Subtotal	-	-		1.965		-		-		-	0.000	1.965	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Enhanced Signal Processing and Line of Sight Testing	MIPR	Army Test & Evaluation Command : Ft. Huachuca, AZ	-	1.044	Mar 2020	0.200	Dec 2020	-		-		-	0.000	1.244	-
Customer Testing	MIPR	Army Test & Evaluation Command : APG, MD	-	-		0.785	Jan 2021	-		-		-	0.000	0.785	-
		Subtotal	-	1.044		0.985		-		-		-	0.000	2.029	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.704	11.001		12.597		-		-		-	Continuing	Continuing	N/A

Remarks

PE 0304270A Project EW5 has no FY2022 funding request; FY2022 funding realigned to 677313CE2.

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development*

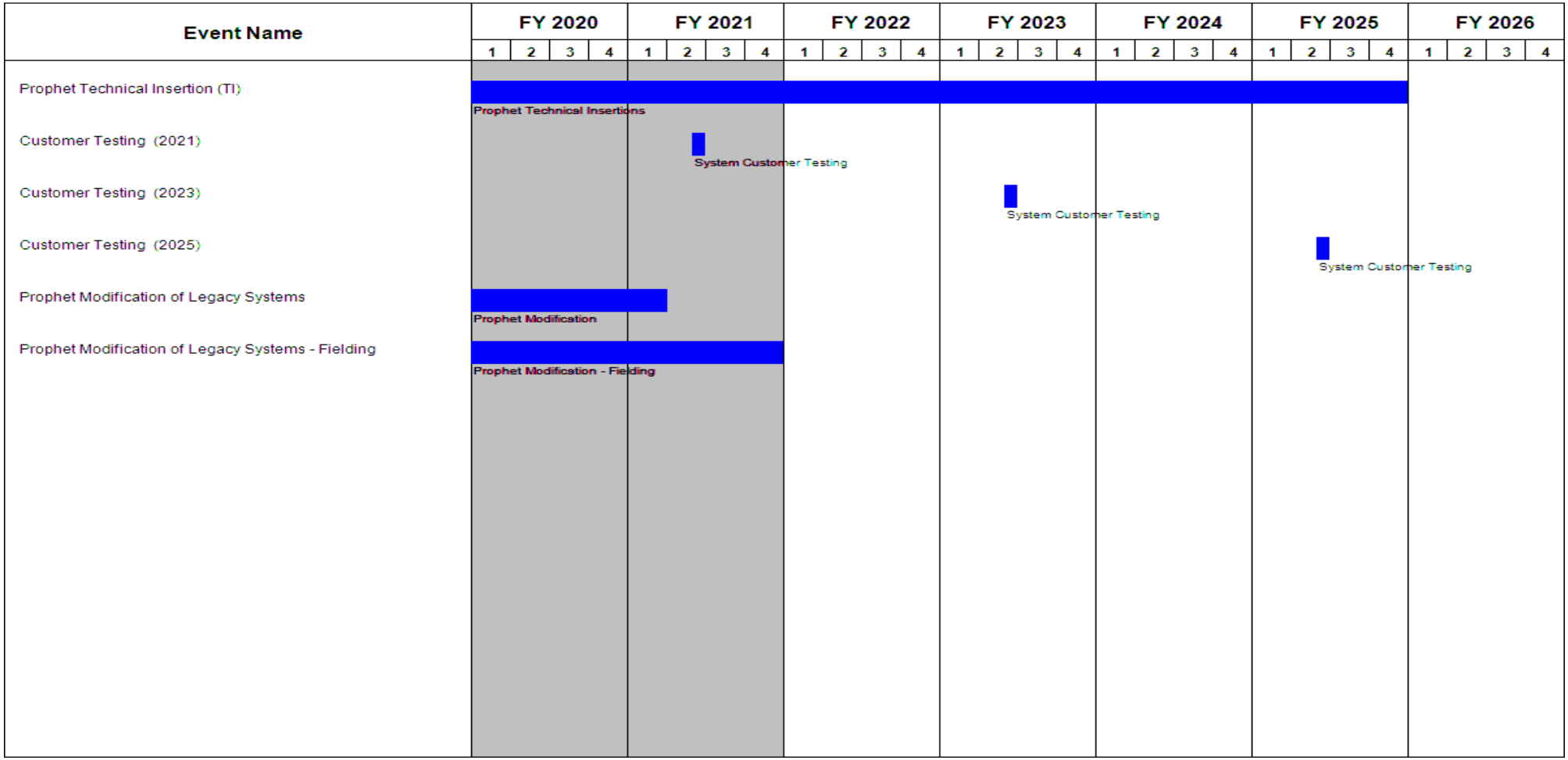

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Prophet Technical Insertion (TI)	4	2008	4	2025
Customer Testing (2021)	2	2021	2	2021
Customer Testing (2023)	2	2023	2	2023
Customer Testing (2025)	2	2025	2	2025
Prophet Modification of Legacy Systems	3	2017	1	2021
Prophet Modification of Legacy Systems - Fielding	2	2018	4	2021

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 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW6 / *ARAT-TSS*	

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
EW6: *ARAT-TSS*	-	7.431	9.053	5.391	-	5.391	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Army Reprogramming Analysis Team (ARAT) is a Department of the Army established program to develop techniques, methods, tools, and architecture to rapidly reprogram mission software embedded in Army Electronic Warfare (EW) Force Protection Systems (FPS) in response to changes in threat signatures. The regulatory guidance directing this mission is contained in Army Regulation (AR) 525-15, AR 525-22, and AR 95-1. The ARAT develops integrated technical solutions required to counter increasingly sophisticated EW Signal threats to US Forces. The ARAT mission software reprogramming infrastructure supports the Army Campaign Plan to provide the Regionally Aligned Forces tactical Commander timely rapid-reprogramming capability of EW systems with mission software. The ARAT mission responsibility is to develop and distribute Mission Software and Products to forward deployed combat forces. ARAT identifies and analyzes worldwide threat signature changes which affect EW systems; determines the impact of observed Signal Intelligence (SIGINT) signature changes; rapidly develops new mission software to adapt friendly systems to detect and defeat enemy threats to U.S. Army ground and air platforms; disseminates the Mission Software and Products to forward deployed forces, and provides government developed tools and software to upload new mission software into the affected EW systems.

A. Mission Description and Budget Item Justification

Current military operations are conducted in a rapidly changing threat environment, where Improvised Explosive Devices (IEDs), Infra Red (IR) man-portable air defense systems (MANPADS) seekers, radar guided surface-to-air-missiles (SAM), laser guided weapons, anti-helicopter mines, and targeting sensors are proliferating and evolving. Integrated solutions are required to counter increasingly sophisticated EW threats. The ARAT reprogramming infrastructure supports the tactical Commander by providing timely rapid reprogramming of mission software and information dissemination for Army supported, Joint and allied services. ARAT supports integrated reprogramming of target acquisition, target engagement, vehicle survivability, and Aircraft Survivability Equipment (ASE). ARAT rapid-reprogramming infrastructure supports tactical requirements for deployed aircraft and ground-based (e.g. Counter Radio-Controlled Improvised Explosive Device (CREW)) survivability systems. ARAT identifies and analyzes threat signature changes which affect EW systems; determines the impact of observed signature changes; develops new mission software to adapt the system to the changes; disseminates the mission software; and provides methods to upload the new mission software into the affected EW systems. Each element within the ARAT infrastructure plays a specific role within the program's rapid reprogramming process, providing the Soldier with the capability to install mission and target identification software at the lowest possible level, thus maximizing flexibility for tactical commanders. ARAT participates in the operational and developmental test design of Army EW systems, and supports Joint Service Reprogramming Exercises in all theaters. ARAT Research and Development enables continuous development of: 1) automated threat analysis tools to rapidly detect (flag) threat changes within the intelligence system, 2) tools to minimize the time to develop Mission Software and Products (MSP), 3) tools and technology to minimize the time required to test and validate MSPs, 4) improved communications conduits to rapidly transmit mission software to upload into supported EW systems. These efforts allow for rapid threat analysis, threat modeling and simulation, mission software development and testing, distribution and uploading of mission software directly to the supported Soldier in the field.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Keeping Pace with the Enemy and Technology	4.424	4.703	2.657

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Description: This effort focuses on developing a capability for the Government to rapidly develop and distribute organic mission software solutions for multiple EW systems. The Army must continually modernize and enhance software tools, hardware modernization, and processes counter enemy technology. ARAT EW6 executes Research, Development, Test, and Evaluation (RDTE) funding to provide an organic Army capability for this organization to rapidly develop, test and distribute mission software solutions for forward deployed combat forces. ***FY 2021 Plans:*** ARAT's FY 2021 base plan to keep pace with enemy and technology will focus on gaining a decisive edge on emerging enemy technologies that are evolving rapidly. With the Army's shift to focus on peer and near peer adversaries ARAT must enhance it's ability to rapidly detect a changed or new threat, analyze the threat, develop a rapid mission software solution to detect and defeat the threat, and rapidly distribute the mission software to forward deployed combat forces. ***FY 2022 Plans:*** ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** ARAT EW6 has decreased funding requirement from FY21 to FY22. Decreased is based on reduction of planned activities from FY21 to FY22.			
Title: Infrastructure Improvements Multispectral ***Description:*** This effort focuses on enhancing the Army's Multispectral Missile Warning System (MWS) software sustainment infrastructure. With the worldwide proliferation of MANPADS the Army must have the capability to rapidly analyze and develop mission software solutions that detect and counter MANPADS to defend Army Aviation platforms against this lethal threat. ***FY 2021 Plans:*** The FY 2021 plan includes modernization of the infrastructure automated testing of mission software. ARAT will continue to focus on enhancing software tools that aid in speeding up testing time of mission software. Mission software must be rigorously tested and validated prior to release to forward deployed combat forces. ARAT performs testing of thousands of test points within a mission software file. Due to the sophistication of emerging threat weapon systems ARAT will increase the amount of test points required to validate the release of mission software. ARAT will need to continue enhancing it's infrastructure to rapidly develop and test mission software. ARAT has procured new threat simulators that require software to allow the simulators to replicate	0.893	1.087	0.616

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
enemy weapon system radars. Simulation software allows ARAT to replicate sophisticated enemy radar systems that are required to conduct laboratory testing of mission software. ***FY 2022 Plans:*** ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** ARAT EW6 has decreased funding requirement from FY21 to FY22. Decreased is based on reduction of planned activities from FY21 to FY22.			
Title: Infrastructure Improvement Radio Frequency General ***Description:*** This effort focuses on enhancing the Army's Radio Frequency (RF) EW system Mission Software and Products (MSP) development and distribution infrastructure. The Army must fight in a contested and congested EW environment. Mission software solutions to defend against RF threats must be rapidly developed, tested, and distributed to Soldiers on an ever changing battlefield. ***FY 2021 Plans:*** ARAT FY 2021 base plan is enhance the Radio Frequency infrastructure. Intended efforts include designing and developing software that emulates radar components to reduce dependency on aging antennas and aircraft processors that are in low inventory across the Army. Emulated aircraft components reduces the maintenance requirement to repair or replace actual aircraft hardware in the ARAT laboratories. Additionally, ARAT will continue enhancing automated testing of mission software. Automated testing decreases the time it takes to validate mission software by utilizing software tools to execute the testing in lieu of having engineers perform the testing functions. ARAT will continue to enhance the Ground Electronic Warfare (GrEW) mission software development and testing infrastructure. GrEW efforts will include software emulation of operational environments where GrEW systems will operate worldwide. The emulation software will allow ARAT to create realistic environments in a laboratory. Realistic environments include the physical and climatological components of where the GrEW systems may operate. Having the capability to model environments in a laboratory provides the ability to rapidly test and validate mission software in lieu of lengthy field testing. ***FY 2022 Plans:***	1.263	1.386	1.004

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** ARAT EW6 has decreased funding requirement from FY21 to FY22. Decreased is based on reduction of planned activities from FY21 to FY22.			
Title: Threat Flagging and Mission Data Set Reprogramming Tool Development ***Description:*** This effort focuses on enhancing the Army's capability to monitor changes in enemy EW systems that affect system performance of Army detection, declaration, and countermeasure EW systems onboard. The enemy is continuously developing or modifying it's EW systems. For Army platforms to have protection against enemy systems it must have a robust capability to immediately detect changes in threat system performance and rapidly develop, test, and distribute a mission software solution that counters the threat. This effort will enhance the Army's capability bridge detection of a change in enemy threat and the rapid development of MSP. ***FY 2021 Plans:*** The FY 2021 Base Plan is to enhance ARAT's ability to rapidly detect threat changes worldwide. Additionally, design and develop software tools that provide the capability to enhance the accuracy and speed of mission software development and testing for Electronic Warfare systems. Planned efforts include enhancing ARAT's Threat Detection and Threat Analysis capability. Enhancing Threat Detection will provide ARAT with the ability to rapidly detect changes in known threats, assess the impact of the change in threat, develop a mission software solution to detect and defeat the threat, and distribute the new mission software to forward deployed forces. ARAT will continue to focus RDT&E efforts on enhancing the mission software development and testing infrastructure. ***FY 2022 Plans:*** ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** ARAT EW6 has decreased funding requirement from FY21 to FY22. Decreased is based on reduction of planned activities from FY21 to FY22.	0.851	1.877	1.114
Accomplishments/Planned Programs Subtotals	7.431	9.053	5.391

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The efforts to be funded in this project will require a combination of systems specific and high-tech knowledge. The contractual services portion for the project will be obtained from both the Communications-Electronics Command (CECOM) Software Engineering Center (SEC) competitive omnibus and the Program Executive Office - Simulation, Training and Instrumentation (PEO STRI), and the Defense Technical Intelligence Center (DTIC) high tech contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW6 / *ARAT-TSS*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	CECOM SEC : Aberdeen Proving Ground, MD	9.548	0.182	Mar 2020	0.188	Mar 2020	-		-		-	Continuing	Continuing	Continuing
		Subtotal	9.548	0.182		0.188		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USG Labor	Various	CECOM SEC : Various Locations	3.483	0.383		1.190		0.576		-		0.576	0.000	5.632	-
Travel	Various	CECOM SEC : Various Locations	0.918	0.084		0.088		0.092		-		0.092	0.000	1.182	-
		Subtotal	4.401	0.467		1.278		0.668		-		0.668	0.000	6.814	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	CECOM SEC, RDECOM, DTIC : Various Locations	41.154	6.782	Mar 2020	7.587	Mar 2020	4.723	Mar 2020	-		4.723	Continuing	Continuing	Continuing
		Subtotal	41.154	6.782		7.587		4.723		-		4.723	Continuing	Continuing	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	55.103	7.431		9.053		5.391		-		5.391	Continuing	Continuing	N/A

Remarks

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

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
Software Development Enhancement Support (see notes in Sch	Software Development Support																											

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Software Development Enhancement Support (see notes in Schedule Detail)	1	2015	4	2021

Note

- Software Test Automation
- Threat Analysis Data Evaluation Tool
- Enhance Data Distribution

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 0304270A / *Electronic Warfare Development*	Project (Number/Name) FJ5 / *Terrestrial Layer System*	

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
FJ5: *Terrestrial Layer System*	-	-	38.105	50.624	-	50.624	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Terrestrial Layer System (TLS) provides Army maneuver forces integrated full spectrum Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyber-enabling non-kinetic offensive operation options to Brigade Combat Team (BCT) commanders. TLS' information Superiority provides Indications and Warnings, Force Protection and Situational Awareness to influence the commander's decision cycle, improve targeting timeliness and accuracy, and provide the maneuver commander with electronic attack and offensive cyber warfare options to deny, degrade, disrupt, or otherwise manipulate the targeted force. TLS employs technologically advanced systems with a modular open-system approach for multiple configurations that can be efficiently sustained and effectively upgraded to provide capabilities against changing near peer and emerging threats to address multi-domain capability gaps.

Justification:
FY 2022 Base funding in the amount of $50.624 million funds system level prototyping, platform integration on multiple platforms and testing efforts for TLS variants that will be fielded to BCTs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Technical / Program Management ***Description:*** Funds will provide for technical engineering and program management. ***FY 2021 Plans:*** FY 2021 technical engineering and program management support for TLS. ***FY 2022 Plans:*** FY 2022 technical engineering and program management support for TLS. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 funding decreased due to availability of other resources to support efforts.	-	7.318	5.799
Title: Platform Integration and System Development ***Description:*** Development of System Level Prototypes and integration of TLS mission equipment onto vehicle platforms that will enable TLS platforms to match vehicle platforms organic to the unit. ***FY 2021 Plans:***	-	28.036	30.492

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Development of System Level Prototypes and integration of TLS mission equipment onto vehicle platform(s). ***FY 2022 Plans:*** Development of System Level Prototypes and integration of TLS mission equipment onto at least, but not limited to the Stryker vehicle platform and AMPV vehicle platform. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 funding requirement increased due to integration on additional platforms.			
Title: Test Events ***Description:*** System and Operational test events ***FY 2021 Plans:*** Testing of TLS system ***FY 2022 Plans:*** Testing of TLS system ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 requirement increased due to additional platforms.	-	2.751	9.476
Title: New signal threat integration and signal relevancy ***FY 2022 Plans:*** Includes, but is not limited to, development and evaluation of Next Generation SIGINT, EA and Cyber capabilities into the TLS baseline to increase signal processing capabilities for the against key near peer and emerging enemy threat signals. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 is the first year for this requirement.	-	-	4.857
Accomplishments/Planned Programs Subtotals	-	38.105	50.624

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
• B97600: *TERRESTRIAL LAYER SYSTEMS (TLS)*	-	8.081	39.240	-	39.240	-	-	-	-	-	-
• 0604021A: *Electronic Warfare Technology Maturation (MIP)*	23.043	15.034	-	-	-	-	-	-	-	-	-

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

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

Remarks

D. Acquisition Strategy

A competitive acquisition approach is planned for TLS development. The TLS program will use a tailored acquisition approach to rapidly deliver an integrated ground intelligence, electronic warfare and cyber capability on multiple platform types to align with maneuver forces. The TLS program will leverage authorities to accelerate delivery through rapid prototyping with rapid fielding approaches or a Milestone C Decision Point.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) FJ5 / *Terrestrial Layer System*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical / Program Management	TBD	TBD : TBD	-	-		7.318	Feb 2021	5.799	Feb 2022	-		5.799	Continuing	Continuing	-
		Subtotal	-	-		7.318		5.799		-		5.799	Continuing	Continuing	N/A

Remarks

Efforts include FFRDC support from Contract #W56KGU-18-D-0004 to continue developing and managing the Signals processing and compute environment as well as from competitive contract #W15P7T-10-D-D421 for Systems Engineering and Technical Assistance (SETA) support.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Vehicle Integration and System Development	C/CPFF	TBD : TBD	-	-		28.036	Mar 2021	30.492	Dec 2021	-		30.492	0.000	58.528	-
New signal threat integration and signal relevancy	C/CPFF	TBD : TBD	-	-		-		4.857	Jan 2022	-		4.857	0.000	4.857	-
		Subtotal	-	-		28.036		35.349		-		35.349	0.000	63.385	N/A

Remarks

Competitive OTA #W15QKN-17-9-5555 for development and integration. FY2022 funding supports continued system development and integration on at least, but not limited to the Stryker vehicle platform and the AMPV vehicle platform that will enable TLS fielded systems to match vehicle platforms organic to the fielded unit.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Events	MIPR	ATEC : APG, MD	-	-		2.751	Mar 2021	9.476	Mar 2022	-		9.476	0.000	12.227	-
		Subtotal	-	-		2.751		9.476		-		9.476	0.000	12.227	N/A

Remarks

FY2022 Test & Evaluation efforts will be accomplished via a combination of various support contracts and direct Government support.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) FJ5 / *Terrestrial Layer System*	

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		38.105		50.624		-		50.624	Continuing	Continuing	N/A

Remarks

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 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

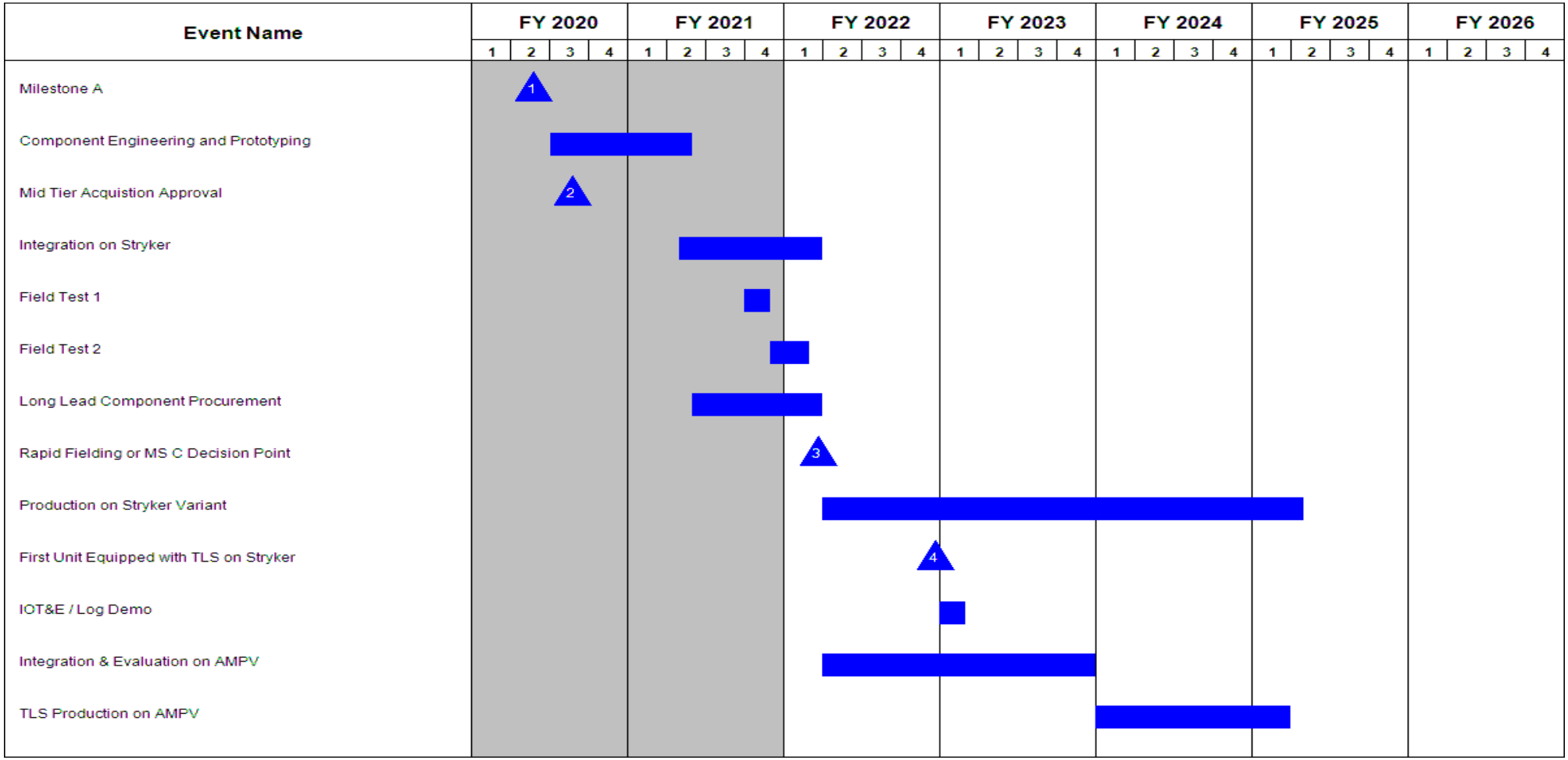

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

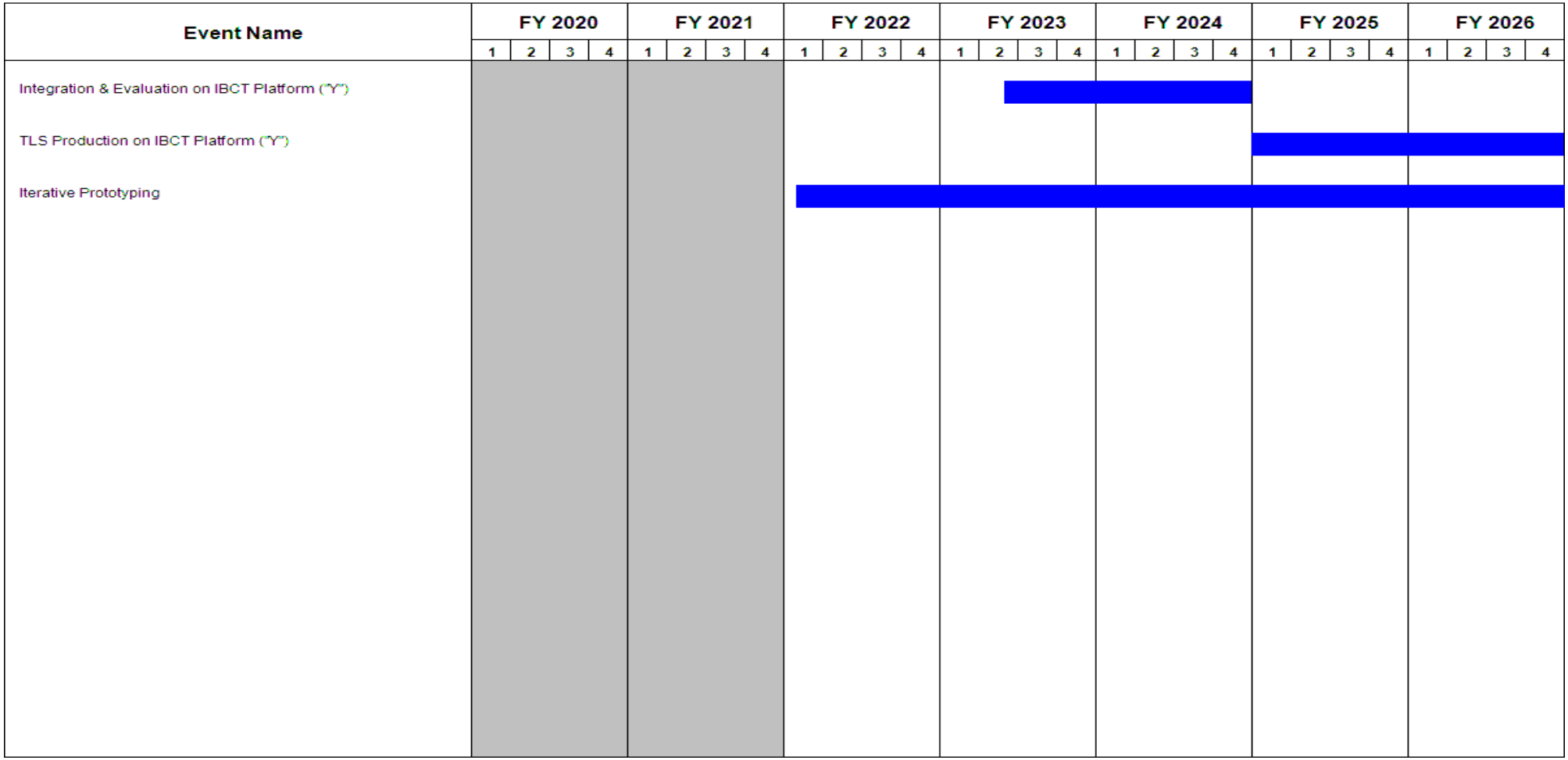

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone A	2	2020	2	2020
Component Engineering and Prototyping	3	2020	2	2021
Mid Tier Acquistion Approval	3	2020	3	2020
Integration on Stryker	2	2021	1	2022
Field Test 1	4	2021	4	2021
Field Test 2	4	2021	1	2022
Long Lead Component Procurement	2	2021	1	2022
Rapid Fielding or MS C Decision Point	1	2022	1	2022
Production on Stryker Variant	2	2022	2	2025
First Unit Equipped with TLS on Stryker	4	2022	4	2022
IOT&E / Log Demo	1	2023	1	2023
Integration & Evaluation on AMPV	2	2022	4	2023
TLS Production on AMPV	1	2024	1	2025
Integration & Evaluation on IBCT Platform ("Y")	2	2023	4	2024
TLS Production on IBCT Platform ("Y")	1	2025	4	2026
Iterative Prototyping	1	2022	1	2027