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

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605236A / <i>Integrated Tactical Communications</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	-	-	12.447	-	12.447	7.737	7.775	7.474	7.331	0.000	42.764
CQ1: <i>Tactical Communication Network Evaluation (TCNE)</i>	-	-	-	12.447	-	12.447	7.737	7.775	7.474	7.331	0.000	42.764

Note

This line is not a new start rather it is a realignment of TCNE scope previously executed in 0605042A FA1/FA2.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization Priority. Tactical Communication Network Evaluation (TCNE) is directly aligned to the Army Network Modernization Strategy Line of Effort 1 (LOE 1) Unified Network; LOE 2, Common Operating Environment (COE), LOE 3, Interoperability; and LOE 4, Command Post Mobility and Survivability. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve their network modernization strategy.

To deliver the network of 2028, the Army outlined four Capability Sets (CS) in Fiscal Years 2021, 2023, 2025, and 2027. In this end-to-end tactical network approach, each CS builds off the previous and is infused with commercial solutions informed by synchronized assessments, experimentations, evaluations, and developmental and operational tests. The TCNE mission represents the development phases of the Cap Sets.

The mission of Tactical Communication Network Evaluation (TCNE) is to deliver the System of Systems(SoS) validation of the N-CFT's Design Goals for every Capability Set. TCNE will develop the system of systems (SoS) network architecture through continuous test and evaluation to include user/soldier feedback, lab based risk reduction(LBRR) and concept development. These events help to identify network gaps in a specific unit, mitigate risk and mature capabilities that are ready for SoS integration within the Integrated Tactical Network(ITN). TCNE will deliver network architectures that have been validated at a representative scale (typically BN+) in an operational environment prior to fielding.

FY 2023 resources will be used to provide SoS network engineering analysis and lab based testing for network advances. Lab based testing will address cyber vulnerabilities and reduce risk related to the integration of the system of system architecture.

The total cost of the Integrated Tactical Network Rapid Prototyping (ITN RP) Middle Tier of Acquisition effort is \$75.6 million RDT&E from FY19 to FY24. The remainder of the ITN RP is fully funded across the Future Years Defense Program.

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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	12.447	-	12.447
Total Adjustments	0.000	0.000	12.447	-	12.447
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	12.447	-	12.447

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Army										Date: April 2022		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605236A / <i>Integrated Tactical Communications</i>				Project (Number/Name) CQ1 / <i>Tactical Communication Network Evaluation (TCNE)</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CQ1: <i>Tactical Communication Network Evaluation (TCNE)</i>	-	-	-	12.447	-	12.447	7.737	7.775	7.474	7.331	0.000	42.764
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This line is not a new start. It is a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Cross Functional Team. Tactical Communication Network Evaluation (TCNE) is directly aligned to the Army Network Modernization Strategy Line of Effort 1 (LOE 1) Unified Network; LOE 2, Common Operating Environment (COE), LOE 3, Interoperability; and LOE 4, Command Post Mobility and Survivability. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve their network modernization strategy.

To deliver the network of 2028, the Army outlined four Capability Sets (CS) in Fiscal Years 2021, 2023, 2025, and 2027. In this end-to-end tactical network approach, each CS builds off the previous and is infused with commercial solutions informed by synchronized assessments, experimentations, evaluations, and developmental and operational tests. The TCNE mission represents the development phases of the Cap Sets.

The mission of Tactical Communication Network Evaluation (TCNE) is to deliver the System of Systems(SoS) validation of the N-CFT's Design Goals for every Capability Set. TCNE will develop the system of systems (SoS) network architecture through continuous test and evaluation to include user/soldier feedback, lab based risk reduction(LBRR) and concept development. These events help to identify network gaps in a specific unit, mitigate risk and mature capabilities that are ready for SoS integration within the Integrated Tactical Network(ITN). TCNE will deliver network architectures that have been validated at a representative scale (typically BN+) in an operational environment prior to fielding.

FY 2023 resources will be used to provide SoS network engineering analysis and lab based testing for network advances. Lab based testing will address cyber vulnerabilities and reduce risk related to the integration of the system of system architecture.

The total cost of the Integrated Tactical Network Rapid Prototyping (ITN RP) Middle Tier of Acquisition effort is \$75.6 million RDT&E from FY19 to FY24. The remainder of the ITN RP is fully funded across the Future Years Defense Program.

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

	FY 2021	FY 2022	FY 2023
Title: Program Management Support	-	-	0.945

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605236A / <i>Integrated Tactical Commun</i> <i>ications</i>	Project (Number/Name) CQ1 / <i>Tactical Communication Network</i> <i>Evaluation (TCNE)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Description: Funding for this purchases SETA support for the TCNE program. Funding goes toward Program management, program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning and Integrated Product Team meetings.</p> <p>FY 2023 Plans: FY23 funds will provide overall management and oversight to implement ITN acquisition strategy and evaluation.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The increase in funds is due to a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.</p>				
<p>Title: Engineering Technical Support</p> <p>Description: Engineering & Technical Analysis Support</p> <p>FY 2023 Plans: FY 2023 funds will provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieve ITN objectives. Funds will facilitate technical test support for candidate products utilized within ITN's iterative evaluation and capability implementation strategy.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The increase in funds is due to a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.</p>		-	-	1.416
<p>Title: Test and Evaluation</p> <p>Description: Testing will include a series of events to identify network capabilities, gaps and potential enhancements to improve mission effectiveness and lethality for a designated unit formation. The results of the events will facilitate the planning preparation, and coordination of the proposed system of system network architecture for a capability set.</p> <p>FY 2023 Plans: ITN testing and evaluation will utilize a series of System of Systems assessments that gather multiple data points which include Lab Based Risk Reduction (LBRR), Technical Test(TT) and Cyber Testing Events. These are collaborative events that provide feedback regarding cybersecurity resiliency, risk reduction and network performance prior to an operational demonstration.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The increase in funds is due to a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.</p>		-	-	10.086
Accomplishments/Planned Programs Subtotals		-	-	12.447

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

N/A

Remarks

D. Acquisition Strategy

The Army will use a rapid prototyping Middle Tier Acquisition (MTA) that will develop and demonstrate multiple prototypes and will validate and demonstrate new / innovative capabilities to meet emerging military needs by conducting a continuous prototyping process. The product of ITN rapid prototyping will provide Warfighters a residual enhanced operational capability and will posture the Army for decisions on follow on MTA rapid fielding efforts or tailored DoD Instruction 5000.02 program acquisitions following each iteration. The ITN will purchase the commercial off the shelf items needed by utilizing various contractual vehicles, to include Common Hardware System 5th Generation (CHS-5), indefinite delivery/indefinite quantity, Defense Logistics Agency and Global Tactical Advanced Communication Systems II.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army **Date:** April 2022

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Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support	TBD	Booz Allen Hamilton : APG	-	-		-		0.945	Feb 2023	-		0.945	0.000	0.945	-
Subtotal			-	-		-		0.945		-		0.945	0.000	0.945	N/A

Remarks
RS3 SETA Contract picks up option year in February of each year.

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Technical Support	TBD	MITRE/Booz Allen Hamilton : APG	-	-		-		1.416	Dec 2022	-		1.416	0.000	1.416	-
Subtotal			-	-		-		1.416		-		1.416	0.000	1.416	N/A

Remarks
Features MITRE and Booz Allen Engineering and Test Support

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	C/Various	Testing : APG/NJ	-	-		-		10.086	Dec 2022	-		10.086	0.000	10.086	-
Subtotal			-	-		-		10.086		-		10.086	0.000	10.086	N/A

Remarks
Funds need to be released by Dec 2022 to support testing events starting in January

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			-	-	-	12.447	-	12.447	0.000	12.447	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
CS25 Baseline Development									CS25 Baseline Development																								
CS 25 User Juries													CS 25 User Juries																				
CS25 CEMA																	CS 25 CEMA																
CS 25 Lab Based Risk Reduction													CS 25 LBRR																				
CS25 Preliminary Design Review																	1 CS25 PDR																
CS25 Critical Design Review																					2 CS25 CDR												
CS25 Fielding Decision																					3 CS25 Fielding Decision												
CS27 Baseline Development																					CS27 Baseline Development												
CS27 Preliminary Design Review																					4 CS27 PDR												
CS27 Critical Design Review																									5 CS27 CDR								
CS27 Fielding Decision																													6 CS27 Fielding Decision				
CS29 Baseline Development																													CS29 Baseline Development				
CS29 Preliminary Design Review																																	7 CS29 PDR

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CS25 Baseline Development	1	2023	2	2024
CS 25 User Juries	1	2023	4	2023
CS25 CEMA	3	2023	2	2024
CS 25 Lab Based Risk Reduction	1	2023	2	2024
CS25 Preliminary Design Review	3	2023	3	2023
CS25 Critical Design Review	2	2024	2	2024
CS25 Fielding Decision	4	2024	4	2024
CS27 Baseline Development	4	2024	2	2026
CS27 Preliminary Design Review	2	2025	2	2025
CS27 Critical Design Review	2	2026	2	2026
CS27 Fielding Decision	4	2026	4	2026
CS29 Baseline Development	4	2026	2	2028
CS29 Preliminary Design Review	2	2027	2	2027
CS29 Fielding Decision	4	2028	4	2028

Note

CS25 Baseline Development Began Under FA1/FA2 scope in 4QFY22 and will continue into FY23 for CQ1. Baseline Development includes hosting several testing events to include Lab Based Risk Reduction, technical test, and Cyber Events to burn down risk and identify gaps in the network architecture. CS27 & CS29 will undergo similar testing to establish network baseline that will ultimately lead to a fielding decision.