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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0604021A / Electronic Warfare Technology Maturation (MIP)
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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	-	23.043	15.034	-	-	-	-	-	-	-	-	-
AW7: Electronic Warfare Technology Maturation	-	23.043	15.034	-	-	-	-	-	-	-	-	-

Note

PE 0604021A has no FY2022 Funding Request.

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) and Expeditionary-Military Intelligence Brigade (EMIB) 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 operation 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.

B. Program Change Summary (\$ in Millions)

	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>
Previous President's Budget	23.043	22.840	0.000	-	0.000
Current President's Budget	23.043	15.034	0.000	-	0.000
Total Adjustments	0.000	-7.806	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-7.806			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: AW7: Electronic Warfare Technology Maturation

Congressional Add: Counter drone RF-signal based targeting

Congressional Add Subtotals for Project: AW7

	<u>FY 2020</u>	<u>FY 2021</u>
	5.000	-
	5.000	-

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604021A / <i>Electronic Warfare Technology Maturation (MIP)</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2020	FY 2021
Congressional Add Totals for all Projects	5.000	-

Change Summary Explanation

FY2021 PE 0604021A Project AW7 Congressional decrease of \$7.806 million citing improving funds management.

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Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604021A / <i>Electronic Warfare Technology Maturation (MIP)</i>				Project (Number/Name) AW7 / <i>Electronic Warfare Technology Maturation</i>			
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
AW7: <i>Electronic Warfare Technology Maturation</i>	-	23.043	15.034	-	-	-	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

PE 0604021A Project AW7 has no FY2022 Funding Request.

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) and Expeditionary-Military Intelligence Brigade (EMIB) 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 operation 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.

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

	FY 2020	FY 2021	FY 2022
Title: Technical / Program Management	2.282	0.719	-
Description: Funds will provide for technical engineering and program management.			
FY 2021 Plans: FY 2021 technical engineering and program management support for TLS.			
FY 2021 to FY 2022 Increase/Decrease Statement: FY2021 is the last year that Budget Activity 4 (BA4) funding is required for Terrestrial Layer System; FY2021 and beyond RDT&E efforts are funded via 0304270A FJ5.			
Title: Systems Engineering and Component Prototyping	15.761	14.315	-
Description: Funds will provide for, but are not limited to development, engineering and evaluation of component level technologies to include antennas, radios, software architecture and other Signals Intelligence (SIGINT), Electronic Warfare Support (ES), Electronic Attack (EA) and Cyber enabling components to mature technical feasibility and reduce Critical Technology Element (CTE) risks. Funds will support, but are not limited to the development capabilities to enhance and integrate Signals of Interest, develop system level designs, reduce Size, Weight and Power (SWaP), to mature components into an			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
emerging Program of Record (PoR) level technology maturation level, and to support the evaluation environment to conduct required developmental events.			
<i>FY 2021 Plans:</i> Continue development of SIGINT, ES, EA and cyber enabling components and system alternatives. Continue to mature and evaluate critical technologies, co-develop Intelligence Community (IC) Signals of Interest (SOI), develop sub-systems, components and reduce component integration risks in a system solution that can be evaluated for affordability, feasibility, and technical maturity; all of which will reduce program technical and cost risks.			
<i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> FY2021 is the last year that Budget Activity 4 (BA4) funding is required for Terrestrial Layer System; FY2021 and beyond RDT&E efforts are funded via 0304270A FJ5.			
Accomplishments/Planned Programs Subtotals	18.043	15.034	-

	FY 2020	FY 2021
<i>Congressional Add:</i> Counter drone RF-signal based targeting	5.000	-
<i>FY 2020 Accomplishments:</i> Development of counter drone RF-signal based targeting.		
Congressional Adds Subtotals	5.000	-

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
• FJ5: <i>Terrestrial Layer System</i>	-	38.105	50.624	-	50.624	-	-	-	-	-	-
• B97610: <i>TERRESTRIAL LAYER SYSTEM BCT</i>	-	8.081	39.240	-	39.240	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

A competitive acquisition approach for component development and prototyping is planned for TLS using a tailored acquisition strategy to rapidly deliver an initial integrated signals intelligence, electronic warfare and cyber capability to the Army. These efforts will be used, but are not limited to identify, develop, prototype, evaluate, analyze, and demonstrate potential capabilities and alternative solutions. These efforts will quantify the respective maturity and effectiveness to mitigate capability gaps against changing near peer representative enemy target sets and operational scenarios. Enhanced capability and other technologies to provide overmatch capabilities will be evaluated for merit and will provide increased performance for production of TLS systems in FY 2022.

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604021A / <i>Electronic Warfare Technology Maturation (MIP)</i>	Project (Number/Name) AW7 / <i>Electronic Warfare Technology Maturation</i>

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
Milestone A		▲1																										
Component Engineering and Prototyping			■	■																								
Mid Tier Acquisition Approval		▲2																										
Integration on Stryker						■	■	■																				
Field Test 1								■																				
Field Test 2												■																
Long Lead Component Procurement							■	■																				
Rapid Fielding or MS C Decision Point												▲3																
Production on Stryker Variant													■	■	■	■	■	■	■	■								
First Unit Equipped with TLS on Strkyer																▲4												
IOT&E / Log Demo																■												
Integration & Evaluation on AMPV												■	■	■	■													
TLS Production on AMPV																							■	■	■	■		

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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
Integration & Evaluation on IBCT Platform ("Y")																												
TLS Production on IBCT Platform ("Y")																												
Iterative Prototyping																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone A	2	2020	2	2020
Component Engineering and Prototyping	3	2020	2	2021
Mid Tier Acquisition 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	4	2024
First Unit Equipped with TLS on Strkyer	4	2022	4	2022
IOT&E / Log Demo	1	2023	1	2023
Integration & Evaluation on AMPV	2	2022	4	2023
TLS Production on AMPV	4	2023	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