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

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>
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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	-	57.090	56.624	30.840	-	30.840	-	-	-	-	-	-
DX5: <i>Electronic Warfare And Management Tool</i>	-	22.547	13.095	16.813	-	16.813	-	-	-	-	-	-
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	29.316	41.535	12.020	-	12.020	-	-	-	-	-	-
VS6: <i>Integrated Electronic Warfare Systems</i>	-	5.227	1.994	2.007	-	2.007	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This program element (PE) encompasses engineering and manufacturing development for tactical Electronic Warfare (EW). The Integrated Electronic Warfare System (IEWS) is a capability set that integrates electronic attack, protect and support functions to dramatically improve the ability to seize, retain, and exploit an advantage within the electromagnetic spectrum (EMS). It is based on a modular, scalable and open architecture to allow Army Brigade Combat Team (BCT) and Joint Force Commander's to tailor capability responses against a variety of EW threats/scenarios.

The IEWS capability set is structured along four program lines of effort: 1) Project DX5 Electronic Warfare Planning and Management Tools (EWPMT), 2) Project DX6 Multi-Function EW (MFEW), 3) Project VS6 Counter Radio-Controlled Improvised Explosive Devices (RCIED) Electronic Warfare (CREW) which provides current defensive electronic attack capability.

Project DX5 - The EWPMT is the Commander's tool to control, manage, and dominate the EMS and Cyber Domains. EWPMT will provide the ability to conduct remote control & management of EW assets to execute offensive and defensive Electronic Attack, EW targeting and enable maneuver by synchronizing EW and Spectrum Management Operations (SMO) across Intelligence, Operations, and Signals to successfully execute Multi-Domain Operations (MDO). As a Commander's tool, EWPMT is predominantly utilized by the Cyber Electromagnetic Activities (CEMA) element's Electronic Warfare Officers (EWO) and ESM for mission planning, access to national and strategic sensors and data repositories, as well as the synchronization of EW and SIGINT enabled platforms.

Project DX6 - The MFEW is a capability set that will provide BCT Commanders with an organic airborne offensive EW capability. MFEW variants empower Commanders to shape the Electromagnetic Spectrum (EMS) to their advantage. The MFEW Air Large system, when installed onto the Gray Eagle (GE) Unmanned Aerial System (UAS), will provide: 1) Offensive Electronic Attack (OEA) - Non-Kinetic Fires capability with the intent of denying, degrading, or disrupting enemy communications capability and non-communications emitters; 2) Electronic Warfare Support (ES) - Capability to search, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic (EM) energy for the purpose of immediate threat recognition, targeting, planning, and execution of future operations; 3) Dissemination of Military Information Support Operations (MISO) products; and 4) Support of Offensive Cyber Operations (OCO) and Multi-Domain Operations.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army	Date: May 2021
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>
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Project VS6 - Counter RCIED CREW, provides protection of ground forces operating in vehicle convoys, single vehicles, and fixed locations in operational theaters, which enables freedom of movement across the depth and breadth of the operational environment. It is programmable with techniques to mitigate emerging threats. In order to keep pace with the threat evolution, development efforts will provide fielded CREW systems as well as other EW systems with techniques that mitigate the range of threats as required. These development efforts may include development of new techniques, integration of existing techniques, and hardware and software development and integration in order to pace the threat.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	59.539	62.426	28.229	-	28.229
Current President's Budget	57.090	56.624	30.840	-	30.840
Total Adjustments	-2.449	-5.802	2.611	-	2.611
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.524			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.449	-2.278			
• Adjustments to Budget Years	-	-	2.611	-	2.611

Change Summary Explanation

Fiscal Year (FY) 2022 funding increase of \$2.611 is for MFEW that supports completion of the MFEW-AL Phase II OTA non-recurring engineering activities and an Operational Assessment in FY 2022.

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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 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</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
<i>DX5: Electronic Warfare And Management Tool</i>	-	22.547	13.095	16.813	-	16.813	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Electronic Warfare Planning and Management Tool (EWPMT) is the Commander's tool to control, manage, and dominate the Electromagnetic Spectrum (EMS) and Cyber Domains. EWPMT will provide the ability to conduct remote control & management of Electronic Warfare (EW) assets to execute offensive and defensive Electronic Attack, EW targeting and enable maneuver by synchronizing EW and Spectrum Management Operations (SMO) across Intelligence, Operations, and Signals to successfully execute Multi-Domain Operations (MDO). As a Commander's tool, EWPMT is predominantly utilized by the Cyber Electromagnetic Activities (CEMA) element's Electronic Warfare Officers (EWO) and Electromagnetic Spectrum Managers (ESM) for mission planning, access to national and strategic sensors and data repositories, as well as the synchronization of EW and SIGINT enabled platforms.

Justification:

Fiscal Year (FY) 2022 Base funds in the amount of \$16.813 million will continue EWPMT Increment 1, provide for software relevancy updates, allow for user engagements to include but not limited to Soldier Touch Point (STP) events and evaluations, allow for integration with offensive/defensive EA ground and aerial based systems as well as other systems within the integrated EW/Signals Intelligence (SIGINT) capability set, and engineering/integration support activities for the EWPMT program.

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

	FY 2020	FY 2021	FY 2022
Title: EWPMT	22.547	13.095	16.813
Description: EWPMT is a Mission Command software application that enhances the CEMA element's ability to plan, coordinate, integrate, and synchronize CEMA (Cyber, EW & ESM) with Mission Command Systems from Joint Task Force (JTF) to Battalion (BN). EWPMT Integrates the EA, EP, ES and SMO functions in support of BCT and EAB for Electronic Warfare and CEMA Planning.			
FY 2021 Plans: CD4 development and EWPMT Increment 1 Test and Evaluation Support (IOT&E) and Full Deployment Decision (FDD). Participate in Soldier Touch Points (STPs) events and evaluations. Development of Command Post (CP) relevancy.			
FY 2022 Plans: EWPMT Increment 1 relevancy to include, but not limited to, sensor, CP, network, and synthetic training environment relevancy. Participate in user engagements to include, but not limited to, STPs events and evaluations.			

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Integration with offensive/defensive EA ground and aerial based systems as well as other systems within the integrated EW/SIGINT capability set. FY 2021 to FY 2022 Increase/Decrease Statement: FY 2022 Increase of \$2.903 million funds Increment 1 requirements to include, but not limited to software relevancy updates, participation in user engagements, and integration with offensive/defensive EA ground and aerial based systems as well as other systems within the integrated EW/SIGINT capability set.			
Accomplishments/Planned Programs Subtotals	22.547	13.095	16.813

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
• K00002: <i>EW Planning & Management Tools (EWPMT)</i>	7.568	7.849	0.783	-	0.783	-	-	-	-	-	-

Remarks
EWPMT Support which includes logistics and travel.

D. Acquisition Strategy
EWPMT is an Automated Information System (AIS) that will follow an evolutionary acquisition strategy using a Capability Drop (CD) construct for rapid development and integration of new EW and SMO capabilities to pace the near peer threats as well as provide for continuous product improvements in support of MDO. EWPMT is modeled primarily after the Incrementally Deployed Software Intensive Program approach found in the DoD Instruction 5000.02.

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>
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Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
PMO Staff/Travel	Various	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	12.833	0.220	Nov 2019	0.155	Mar 2021	0.169	Mar 2022	-		0.169	Continuing	Continuing	-
Subtotal			12.833	0.220		0.155		0.169		-		0.169	Continuing	Continuing	N/A

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
EMD Contract - EWPMT CD1	C/IDIQ	Raytheon : Fort Wayne, IN	18.200	-		-		-		-		-	0.000	18.200	18.200
EMD Contract - EWPMT CD2	C/IDIQ	Raytheon : Fort Wayne, IN	24.359	-		-		-		-		-	0.000	24.359	24.359
EMD Contract - EWPMT CD3	C/IDIQ	Raytheon : Fort Wayne, IN	26.380	-		-		-		-		-	0.000	26.380	26.373
EMD Contract - EWPMT CD4	C/IDIQ	Raytheon : Fort Wayne, IN	5.330	17.598	Nov 2019	7.757	Nov 2020	-		-		-	0.000	30.685	30.576
EMD Contract- EWPMT system integration, relevancy, and user engagements	C/IDIQ	Raytheon : Fort Wayne, IN	-	-		0.674	Jan 2021	11.445	Dec 2021	-		11.445	0.000	12.119	14.953
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	0.604	-		-		-		-		-	0.000	0.604	-
Subtotal			74.873	17.598		8.431		11.445		-		11.445	0.000	112.347	N/A

Remarks
EMD Contract- EWPMT system integration, relevancy, and User Engagements: W15P7T-14-D-C006 / TO: W56KGY-19-F-0016. Fiscal Year (FY) 2022 RDT&E funding of \$11.595 million continues system integration with systems in the integrated EW/SIGINT capability set, software relevancy updates, and EWPMT user engagements.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0604270A / Electronic Warfare Development				DX5 / Electronic Warfare And Management Tool							
Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EWPMT Technical and Engineering Support	Option/CPFF	Various : Various	29.738	4.264	Nov 2019	2.097	Dec 2020	4.428	Dec 2021	-		4.428	Continuing	Continuing	-
Subtotal			29.738	4.264		2.097		4.428		-		4.428	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EWPMT Test Support	MIPR	Various : Various	6.045	0.465	Jan 2020	2.412	Dec 2020	0.771	Dec 2021	-		0.771	Continuing	Continuing	Continuing
Subtotal			6.045	0.465		2.412		0.771		-		0.771	Continuing	Continuing	N/A
Project Cost Totals			123.489	22.547		13.095		16.813		-		16.813	Continuing	Continuing	N/A
Remarks															

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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 0604270A / <i>Electronic Warfare Development</i>		Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</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
EWPMT Contract																												
Development and Test for CD3																												
Development for CD4 and Test for EWPMT Increment 1																												
Initial Operational Test & Evaluation (IOT&E)																												
EWPMT Integration, Relevancy, and User Engagements																												
Full Deployment Decision (FDD)																												
Full Operational Capability (FOC)																												
NET/NEF COMPO 1																												
NET/NEF COMPOs 2 & 3																												

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EWPMT Contract	1	2014	4	2023
Development and Test for CD1	4	2014	3	2016
Test CD1 (Government Confidence test)	2	2016	2	2016
Limited Deployment Decision for CD1	4	2016	4	2016
CD1 Fielding	4	2016	3	2018
Initial Operational Capability (IOC)	1	2017	1	2017
Development and Test for CD2	4	2016	4	2018
Development and Test for CD3	3	2018	3	2020
Development for CD4 and Test for EWPMT Increment 1	4	2019	4	2021
Initial Operational Test & Evaluation (IOT&E)	3	2021	4	2021
EWPMT Integration, Relevancy, and User Engagements	4	2021	4	2023
Full Deployment Decision (FDD)	2	2022	2	2022
Full Operational Capability (FOC)	4	2025	4	2025
NET/NEF COMPO 1	1	2023	4	2025
NET/NEF COMPOS 2 & 3	1	2026	4	2026

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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 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</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
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	29.316	41.535	12.020	-	12.020	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Multi-Function Electronic Warfare (MFEW) is a capability set that will provide Maneuver Commanders with an organic airborne offensive Electronic Warfare (EW) capability, which empowers Commanders to shape the Electromagnetic Spectrum (EMS) to their advantage. The MFEW Air Large system, when installed onto the Gray Eagle (GE) Unmanned Aerial System (UAS), will provide: 1) Offensive Electronic Attack (OEA) - Non-Kinetic Fires capability with the intent of denying, degrading, or disrupting enemy communications capability and non-communications emitters; 2) Electronic Warfare Support (ES) - Capability to search, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic (EM) energy for the purpose of immediate threat recognition, targeting, planning, and execution of future operations; 3) Dissemination of Military Information Support Operations (MISO) products; and 4) Support of Offensive Cyber Operations (OCO) and other activities to support Multi-Domain Operations.

Justification:

Fiscal Year (FY) 2022 Base funding in the amount of \$12.02 million will support completion of MFEW Air Large non-recurring engineering activities to include contractor testing, test range and support, and Government Limited User Test (LUT).

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

	FY 2020	FY 2021	FY 2022
Title: Multi-Function Electronic Warfare (MFEW) Air Large	29.316	41.535	12.020
Description: MFEW-Air Large is an airborne Electronic Warfare payload to be integrated onto the Gray Eagle Unmanned Aerial Vehicle to provide offensive Electronic Attack (EA) and Electronic Warfare Support (ES) capability to the BCT.			
FY 2021 Plans: Continue Engineering and Manufacturing Development (EMD) activities, to include 4 EMD articles, and platform integration.			
FY 2022 Plans: Complete EMD activities, to include 4 EMD articles, conduct flight testing and a LUT.			
FY 2021 to FY 2022 Increase/Decrease Statement: Decrease of funding reflects the completion of EMD in FY 2022 and conducting formal LUT.			
Accomplishments/Planned Programs Subtotals	29.316	41.535	12.020

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• B05000: <i>Multi-Function Electronic Warfare (MFEW) Systems</i>	-	8.669	-	-	-	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

MFEW Air has employed a tailored acquisition approach to rapidly deliver capability to the field. The MFEW Air Large employed a competitive acquisition approach for the EMD phase of the program. The development is using a modular open-system approach to rapidly deliver an initial airborne EW capability to the Army using the Consortium for Command, Control, Communications, and Computer Technologies (C5) Other Transaction Agreement (OTA). Phase 1 will build two (2) MFEW-AL systems to demonstrate select OEA and ES capabilities. Phase 2 will build four (4) EMD systems for testing, evaluation, qualification and certification, verification of OEA, ES, MISO and OCO performance capabilities, and flight testing.

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>
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Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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 Office Support - MFEW Air	Various	PM Electronic Warfare & Cyber (PM EW&C) : Aberdeen Proving Ground, MD	1.696	0.008	Jan 2020	0.040	Jan 2021	0.200	Jan 2022	-		0.200	0.000	1.944	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	0.131		-		-		-		-	0.000	0.131	-
FY21 ABO Adjustment Pending	TBD	ABO : ABO	-	-		0.937	Feb 2021	-		-		-	0.000	0.937	-
Subtotal			1.696	0.139		0.977		0.200		-		0.200	0.000	3.012	N/A

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
MFEW OTA Prototype Design&Development Contract	C/FFP	C5 Consortium OTA : Acquisition Contracting Center-New Jersey	25.100	-		-		-		-		-	0.000	25.100	-
Command and Control Development Contract	C/CPFF	EW/PMT / APP EW : Aberdeen Proving Ground, MD	0.457	-		-		-		-		-	0.000	0.457	-
MFEW Techniques and risk reduction activities	C/CPFF	Various (JHU, GTRI, MITRE, etc) : Aberdeen Proving Ground, MD	1.759	-		-		-		-		-	0.000	1.759	-
MFEW OTA EMD Contract	C/FFP	C5 Consortium OTA : Acquisition Contracting Center-New Jersey	7.927	24.439	Feb 2020	35.315	Feb 2021	5.367	Nov 2021	-		5.367	0.000	73.048	-
Gray Eagle Integration	Option/CPFF	General Atomics : San Diego, CA	0.972	1.289	Jan 2020	-		-		-		-	0.000	2.261	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0604270A / Electronic Warfare Development				DX6 / Multi-Function Electronic Warfare (MFEW)							
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Logistics Development	SS/CPFF	Lockheed Martin Corporation : Owego, NY	-	-		3.907	Jan 2021	0.850	Jan 2022	-		0.850	0.000	4.757	-
Subtotal			36.215	25.728		39.222		6.217		-		6.217	0.000	107.382	N/A
Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering - MFEW Air	C/CPFF	Various : Aberdeen Proving Ground, MD	2.750	0.639	Dec 2019	0.307	Dec 2020	-		-		-	0.000	3.696	-
Matrix Engineering - MFEW Air	Various	Various : Aberdeen Proving Ground, MD	1.858	1.192	Dec 2019	1.029	Dec 2020	1.203	Dec 2021	-		1.203	0.000	5.282	-
Subtotal			4.608	1.831		1.336		1.203		-		1.203	0.000	8.978	N/A
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test range and test support	Various	Yuma Proving Grounds : Yuma, AZ	0.628	1.618		-		1.900	Jan 2022	-		1.900	0.000	4.146	-
Modeling & Simulation / Test Infrastructure	Various	Various : Aberdeen Proving Ground, MD	10.790	-		-		-		-		-	0.000	10.790	-
Limited User Test	TBD	Army Test Command : Aberdeen Proving Ground, MD	-	-		-		2.500	Jan 2022	-		2.500	0.000	2.500	-
Subtotal			11.418	1.618		-		4.400		-		4.400	0.000	17.436	N/A

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</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
MFEW Air OTA Prototype Design & Development	█																											
MFEW Air OTA EMD					█				█																			
Tailored Milestone C					▲ 1																							
Limited User Test													█															
MFEW Air Production and Fielding									█				█				█				█							

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Tailored Milestone B	3	2018	3	2018
MFEW Air OTA Award	4	2018	4	2018
MFEW Air OTA Prototype Design & Development	4	2018	2	2020
MFEW Air OTA EMD	2	2020	4	2022
Tailored Milestone C	3	2021	3	2021
Limited User Test	4	2022	4	2022
MFEW Air Production and Fielding	3	2021	4	2026

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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 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</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
<i>VS6: Integrated Electronic Warfare Systems</i>	-	5.227	1.994	2.007	-	2.007	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Counter Radio Controlled Improvised Explosive Device (RCIED) Electronic Warfare (CREW) provides protection of ground forces operating in vehicle convoys, single vehicles and fixed locations in operational theaters which enables freedom of movement across the depth and breadth of the operational environment. Current CREW systems are programmable with techniques to mitigate emerging threats. In order to keep pace with the threat evolution, development efforts will provide fielded CREW systems as well as other Electronic Warfare (EW) systems with techniques that mitigate the range of threats as required. These development efforts may include development of new techniques, integration of existing techniques, as well as hardware and software development and integration in order to pace the threat.

Justification:

Fiscal Year (FY) 2022 Base funding in the amount of \$2.007 million funds the continued support of CREW systems as well as other EW systems with techniques that mitigate the range of threats as required. These efforts include development of new techniques, integration of existing techniques, as well as hardware and software enhancement and integration in order to pace the threat.

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

	FY 2020	FY 2021	FY 2022
Title: IEWS - CREW	5.227	1.994	2.007
Description: The Integrated Electronic Warfare System (IEWS) will provide multiple capabilities, to include but not limited to, Electronic Warfare Planning and Management Tool (EWPMT), Multi-Function EW (MFEW), and Defensive Electronic Warfare (DEW). The Army's only current Defensive Electronic Warfare solution is Counter Radio Controlled Improvised Explosive Device (RCIED) Electronic Warfare (CREW).			
FY 2021 Plans: Continue IEWS development of new techniques, integration of existing techniques, and hardware and software development and integration in order to pace the threat.			
FY 2022 Plans: Continue IEWS development of new techniques, integration of existing techniques, and hardware and software development and integration in order to pace the threat.			
FY 2021 to FY 2022 Increase/Decrease Statement:			

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
Funding slightly increased to continue support of IEWS development of new techniques, integration of existing techniques, and hardware and software development and integration in order to pace the threat.				
Accomplishments/Planned Programs Subtotals		5.227	1.994	2.007
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
VS6 funding supports hardware and software enhancement and integration to pace the threat and will leverage Other Government Agencies' competitively awarded contracts and task orders.				

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>
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Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
PMO Staff/Travel for EWPMT	Allot	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	4.956	-		-		-		-		-	0.000	4.956	-
Program and Technical Assistance support	C/CPFF	TBD : Aberdeen Proving Ground, MD	3.789	-		-		-		-		-	0.000	3.789	-
PMO Staff/Travel for CREW	Allot	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	2.781	0.099	Dec 2019	0.020	Dec 2020	0.020	Dec 2021	-		0.020	0.000	2.920	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	0.023		-		-		-		-	0.000	0.023	-
Subtotal			11.526	0.122		0.020		0.020		-		0.020	0.000	11.688	N/A

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
EMD Contract - EWPMT	C/CPIF	SOTERA Defense Solutions Herndon, VA : RAYTHEON Fort Wayne, IN	38.318	-		-		-		-		-	0.000	38.318	-
IEWE Engineering and Development	MIPR	I2WD : Aberdeen Proving Ground, MD	5.557	-		1.974	Dec 2020	1.987	Dec 2021	-		1.987	0.000	9.518	-
Risk Reduction Studies for MFEW	MIPR	Various : Various	7.969	-		-		-		-		-	0.000	7.969	-
Develop CREW H/W and S/W solutions	C/CPFF	SRC, Inc. : Syracuse, NY	27.133	-		-		-		-		-	0.000	27.133	-
Development of H/W and S/W for CREW and other EW systems	SS/CPFF	Various : Various	-	4.118	Feb 2020	-		-		-		-	0.000	4.118	-
Subtotal			78.977	4.118		1.974		1.987		-		1.987	0.000	87.056	N/A

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>
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Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
MFEW Technical/ Engineering Support - Contractor	C/CPFF	GTRI : Atlanta, GA	2.046	-		-		-		-		-	0.000	2.046	-
Matrix Engineering Support	MIPR	CERDEC : Aberdeen Proving Ground, MD	7.617	0.149	Dec 2019	-		-		-		-	0.000	7.766	-
EWPMT Architecture Study	MIPR	Various : Various	1.194	-		-		-		-		-	0.000	1.194	-
Engineering support	C/CPFF	Various : Various	3.207	0.838	Dec 2019	-		-		-		-	0.000	4.045	-
FY 2019 MDAP Tax	TBD	FY 2019 Pending Rescission : FY 2019 Pending Rescission	0.006	-		-		-		-		-	0.000	0.006	-
Subtotal			14.070	0.987		-		-		-		-	0.000	15.057	N/A

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
EWPMT Test support	MIPR	Various : TBD	1.096	-		-		-		-		-	0.000	1.096	-
Operational Assessment (OA) of DV4 systems	MIPR	Yuma Proving Ground : Yuma, AZ	1.950	-		-		-		-		-	0.000	1.950	-
Continuous evaluation of CREW Technologies	MIPR	Yuma Proving Ground Yuma, AZ : YPG, AZ	1.718	-		-		-		-		-	0.000	1.718	-
Subtotal			4.764	-		-		-		-		-	0.000	4.764	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		109.337	5.227	1.994	2.007	2.007	0.000	118.565	N/A

Remarks

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</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
Develop HW and SW solutions for CREW	██████████																											
Develop HW and SW solutions for CREW and other EW system	██████████																											
Integrated Electronic Warfare System Development																												

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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 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop H/W and S/W solutions for CREW	2	2016	2	2020
Secondary Unit Development	3	2018	4	2019
Develop H/W and S/W solutions for CREW and other EW systems	4	2019	4	2020
Integrated Electronic Warfare System Development	2	2021	3	2026