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**Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army** **Date:** May 2017

<b>Appropriation/Budget Activity</b> 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0604270A / Electronic Warfare Development							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	20.586	37.242	71.671	-	71.671	81.511	80.623	65.807	50.466	Continuing	Continuing
DX5: <i>Electronic Warfare And Management Tool</i>	-	10.739	19.440	33.120	-	33.120	20.475	18.908	11.214	18.278	Continuing	Continuing
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	0.000	3.969	24.310	-	24.310	46.738	48.943	42.257	23.617	Continuing	Continuing
ET7: <i>Radio Frequency Interference Mitigation</i>	-	0.000	4.151	4.454	-	4.454	4.356	2.674	2.079	3.000	Continuing	Continuing
VS6: <i>Integrated Electronic Warfare Systems</i>	-	9.847	9.682	9.787	-	9.787	9.942	10.098	10.257	5.571	Continuing	Continuing

## **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 system of systems 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, and 4) Project ET7 Radio Frequency Interference Mitigation (RIM) which resolves radio frequency interference and electromagnetic fratricide and enables electronic warfare and communications compatibility.

Project DX5 - EWPMT will provide the Electronic Warfare Officer (EWO) planning capabilities to coordinate, manage, and deconflict the use of the Electromagnetic Spectrum and synchronize spectrum operations within the Cyber Electromagnetic Activities (CEMA) cell. EWPMT will integrate data elements from Mission Command, Intelligence, and Fires to achieve a Common Operating Picture (COP) of the Electromagnetic Operational Environment.

Project DX6 - The Multi-Function EW (MFEW) is a System of Systems that will provide the BCT Commander with an organic airborne and ground offensive Electronic Attack (EA) and Electronic Warfare Support (ES) capability. MFEW-Air and MFEW-Ground variants empower Commanders to shape the Electromagnetic Spectrum (EMS) to their advantage. MFEW will provide commanders from BCT to CORPS with an organic EW capability that dramatically improves a land force's ability to seize, retain, and exploit an advantage within the EMS in order to execute successful unified land operations. These capabilities give the commander a competitive advantage by denying, degrading the enemy's ability to conduct Command and Control (C2), Intelligence, Surveillance and Reconnaissance (ISR), and targeting; and allows the commander to optimize effects within the EMS at the time and place of their choosing. These systems are networked with the Electronic Warfare Planning and Management Tool (EWPMT) to allow remote operation and dynamic tasking/reprogramming.

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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army			Date: May 2017			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604270A / Electronic Warfare Development				
<p>Project ET7 – Radio Frequency Interference Mitigation (RIM) is a cross cutting capability to centrally manage and provide oversight to identify, define, test, and coordinate development of Radio Frequency (RF) interference mitigation material solutions to resolve mutual RF interference and electromagnetic fratricide for Spectrum Dependent Systems (SDS).</p> <p>Project VS6 - Counter Radio Controlled Improvised Explosive Device (RCIED) Electronic Warfare (CREW) provides for protection for ground forces operating in vehicle convoys, single vehicle operations and fixed locations in all theatres of operations. It is programmable to migrate with the evolving threat and provides non-lethal capabilities which enable freedom of movement across depth/breadth of the operational environment.</p> <p>FY 2018 budget request funds Electronic Warfare Development.</p>						
B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget		18.843	34.642	61.215	-	61.215
Current President's Budget		20.586	37.242	71.671	-	71.671
Total Adjustments		1.743	2.600	10.456	-	10.456
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		2.441	-			
• SBIR/STTR Transfer		-0.698	-			
• Adjustments to Budget Years		0.000	2.600	10.456	-	10.456
Change Summary Explanation						
FY 2016 Funding reflects an Above Threshold Reprogramming (16-19 PA) increase in the amount of 2.441 million and (.698) million transfer in support of SBIR/STTR.						
FY 2018 Funding reflects the following adjustments by project:						
- Project DX5 increase of funding in the amount of 10.712 million supports Capability Drop 3 (CD3) development, which includes Cyber Situational Awareness, test and support activities and Program Management Office.						
- Project DX6 decrease in the amount of (.235) million is a result of realignment of program requirements.						
- Project ET7 increase of .145 million supports ongoing Interference Cancellation (IC) Light technology and IC algorithm technology development efforts.						
- Project VS6 decrease in the amount of (.031) million is a result of realignment of program requirements.						

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DX5: <i>Electronic Warfare And Management Tool</i>	-	10.739	19.440	33.120	-	33.120	20.475	18.908	11.214	18.278	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

FY 2018 Funding reflects increased funding in the amount of 10.712 million to support Capability Drop 3 (CD3) development, which includes Cyber Situational Awareness, test and support activities and Program Management Office.

**A. Mission Description and Budget Item Justification**

The Electronic Warfare Planning and Management Tool (EWPMT) will provide the Electronic Warfare Officer (EWO) and Spectrum Manager the ability to control and manage the Electromagnetic Spectrum (EMS). EWPMT will provide: capabilities to plan, coordinate, manage, and deconflict electronic warfare (EW) activities, the ability to employ assets to conduct offensive EW targeting, use of the Electromagnetic Spectrum and the ability to synchronize EW spectrum operations within the Cyber Electromagnetic Activities (CEMA) cell. EWPMT is a suite of software tools and applications that will provide a spectrum Common Operating Picture for the EWO and Spectrum Manager. EWPMT will integrate data elements from Mission Command, Intelligence, and Fires to achieve a Common Operating Picture of the Electromagnetic Operational Environment.

Justification:

FY2018 funds in the amount of \$33.120 million will complete Capability Drop 2 (CD2) development, test and support activities, as well as begin CD3 initial development for the EWPMT program.

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

	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
<b>Title:</b> EWPMT	10.739	19.440	33.120
<b>Description:</b> EWPMT is a suite of software tools and applications that will allow the Commander and staff a mission command capability to plan, coordinate, manage, and de-conflict unit EW and spectrum management activities.			
<b>FY 2016 Accomplishments:</b> Completed CD1 development, test and support activities Awarded CD2 development, test and support activities			
<b>FY 2017 Plans:</b> Funds provided for CD2 software development, test support activities, integration and program management office operations for the EWPMT program			
<b>FY 2018 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Army										<b>Date:</b> May 2017	
<b>Appropriation/Budget Activity</b> 2040 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>				<b>Project (Number/Name)</b> DX5 / <i>Electronic Warfare And Management Tool</i>			

  

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>				<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Complete CD2 development, test and support activities						
Award CD3 development, test and support activities						
<b>Accomplishments/Planned Programs Subtotals</b>				10.739	19.440	33.120

  

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPA: K00002 - <i>EW Planning &amp; Management Tools (EWPMT)</i>	6.652	3.235	5.805	-	5.805	5.947	7.846	8.145	1.000	Continuing	Continuing

**Remarks**  
EWPMT Fielding Support (New Equipment Training (NET), delta training, Interim Contractor Support (ICS) and Program Management (PM)).

  

**D. Acquisition Strategy**  
EWPMT is an Automated Information System (AIS) that will follow an evolutionary acquisition strategy using an Incrementally Deployed Software Intensive Program for rapid development and continuous product improvements. The overall strategy is to deploy software Capability Drops (CDs) to allow an incremental merger of the Electronic Warfare and Spectrum Management software tools.

  

**E. Performance Metrics**  
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army												Date: May 2017			
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>					
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
PMO Staff/Travel	Various	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	6.758	1.110	Oct 2015	1.112	Dec 2016	2.159	Jan 2018	-		2.159	Continuing	Continuing	Continuing
Subtotal			6.758	1.110		1.112		2.159		-		2.159	-	-	-
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
EMD Contract - EWPMT CD1	C/IDIQ	Raytheon : Fort Wayne, IN	16.234	1.966	Feb 2016	-		-		-		-	0.000	18.200	18.200
EMD Contract - EWPMT CD2	C/IDIQ	Raytheon : Fort Wayne, IN	1.174	4.846	Jun 2016	14.170	Feb 2017	5.378	Dec 2017	-		5.378	0.000	25.568	23.470
EMD Contract - EWPMT CD3	C/IDIQ	Raytheon : Fort Wayne, IN	0.000	-		-		18.749	Apr 2018	-		18.749	8.481	27.230	19.430
Subtotal			17.408	6.812		14.170		24.127		-		24.127	8.481	70.998	61.100
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	Allot	Various : Various	14.248	2.535	Dec 2015	3.432	Dec 2016	3.152	Jan 2018	-		3.152	Continuing	Continuing	Continuing
Subtotal			14.248	2.535		3.432		3.152		-		3.152	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	2.475	0.282	Dec 2015	0.726	Aug 2017	3.682	Jan 2018	-		3.682	Continuing	Continuing	Continuing

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: FY 2018 Army</b>												<b>Date:</b> May 2017		
<b>Appropriation/Budget Activity</b> 2040 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>				<b>Project (Number/Name)</b> DX5 / <i>Electronic Warfare And Management Tool</i>				

  

Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
<b>Subtotal</b>			2.475	0.282		0.726		3.682		-		3.682	-	-	-

  

	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	40.889	10.739	19.440	33.120	-	33.120	-	-	-

  

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army																Date: May 2017														
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 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022					
	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 of CD 1																														
Test CD 1 (Government Confidence test)																														
(1) Limited Deployment Decision of CD1																														
CD1 Fielding																														
(2) Initial Operational Capability (IOC)																														
Development and Test of CD2																														
Test CD2 (Limited User Test)																														
(3) Limited Deployment Decision of CD2																														
Development and Test of CD3																														
Development and Test of CD4																														

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<b>Exhibit R-4A, RDT&amp;E Schedule Details: FY 2018 Army</b>			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> DX5 / <i>Electronic Warfare And Management Tool</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
EWPMT Contract	1	2014	1	2020
Development and Test of CD 1	4	2014	3	2016
Test CD 1 (Government Confidence test)	2	2016	2	2016
Limited Deployment Decision of CD1	4	2016	4	2016
CD1 Fielding	4	2016	2	2017
Initial Operational Capability (IOC)	1	2017	1	2017
Development and Test of CD2	4	2016	2	2018
Test CD2 (Limited User Test)	2	2018	2	2018
Limited Deployment Decision of CD2	4	2018	4	2018
Development and Test of CD3	3	2018	1	2020
Development and Test of CD4	4	2019	4	2021



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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	0.000	3.969	24.310	-	24.310	46.738	48.943	42.257	23.617	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

FY 2018 Funding reflects project DX6 decrease in the amount of (.235) million, a result of realignment of program requirements.

**A. Mission Description and Budget Item Justification**

The Multi-Function EW (MFEW) is a System of Systems that will provide the BCT Commander with an organic airborne and ground offensive Electronic Attack (EA) and Electronic Warfare Support (ES) capability. MFEW-Air and MFEW-Ground variants empower Commanders to shape the Electromagnetic Spectrum (EMS) to their advantage. MFEW will provide commanders with an organic EW capability that dramatically improves a land force's ability to seize, retain, and exploit an advantage within the EMS in order to execute successful unified land operations. These capabilities give the commander a competitive advantage by denying, degrading the enemy's ability to conduct Command and Control (C2), Intelligence, Surveillance and Reconnaissance (ISR), and targeting, and allows the commander to optimize effects within the EMS at the time and place of their choosing. These systems are networked with the Electronic Warfare Planning and Management Tool (EWPMT) to allow remote operation and dynamic tasking/reprogramming.

MFEW-Air is an airborne payload to be mounted on both manned and unmanned ariel platforms. MFEW-Air is comprised of three variants: Air Large (Class IV Unmanned Aerial Vehicle), Air Small (Class III Unmanned Aerial Vehicle), and manned rotary wing payloads. MFEW-Air will retain the capability to operate independently, but when integrated into a system of systems will provide a layered EW approach that also will include the MFEW-Ground variants. This will provide extended target frequency range coverage, increased target geo-location precision, increased target standoff range, and increased persistence on target in all weather conditions day or night.

**Justification:**

FY2018 Base dollars in the amount of \$24.310 million will complete MFEW-Air Large Milestone B (MS B) activities with a MS B Decision and competitive award of an Engineering and Manufacturing Developmental (EMD) contract; and commence MFEW-Ground pre-Milestone B activities.

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

	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
<b>Title:</b> Multi-Function EW (MFEW) Air	-	3.969	20.329
<b>Description:</b> MFEW-Air is an airborne Electronic Warfare payload to be integrated onto a Class IV Unmanned Aerial Vehicle to provide offensive Electronic Attack (EA) and Electronic Support (ES) capability to the BCT.			
<b>FY 2017 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Army		<b>Date:</b> May 2017	
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2016</b>	<b>FY 2017</b>
MFEW: Develop MS B documentation in support of FY2018 Milestone B.			
<b>FY 2018 Plans:</b> MS B decision and award Engineering & Manufacturing Development (EMD) contract for the EMD Phase of MFEW-Air by 3QFY18.			
<b>Title:</b> Multi-Function EW (MFEW) Ground <b>Description:</b> MFEW-Ground pre-Milestone B activities.		-	-
<b>FY 2018 Plans:</b> Develop required statutory/regulatory documentation and Request for Proposal (RFP) to support a Milestone B decision and EMD contract award in FY19.			3.981
<b>Accomplishments/Planned Programs Subtotals</b>		-	3.969
<b>24.310</b>			
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A			
<b>Remarks</b>			
<b>D. Acquisition Strategy</b> The Multi-Function EW (MFEW) is a System of Systems that will provide the BCT Commander with an organic offensive Electronic Attack (EA), and Electronic Warfare Support (ES), and Defensive Electronic Attack (DEA) capability. Initially, an air large variant payload will be developed. MFEW will deliver scalable non-lethal effects to support Unified Land Operations and protect personnel, equipment and facilities.  A competitive contract award is planned for MFEW-Air.			
<b>E. Performance Metrics</b> N/A			

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army												Date: May 2017			
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>					
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Program Management Office Support - MFEW Air	TBD	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	0.000	-		0.396	May 2017	0.235	Jan 2018	-		0.235	0.000	0.631	0.000
Program Management Office Support - MFEW Ground	TBD	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	0.000	-		-		0.206	Jan 2018	-		0.206	0.000	0.206	0.000
Subtotal			0.000	-		0.396		0.441		-		0.441	0.000	0.837	0.000
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
MFEW Development Contract	C/TBD	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	0.000	-		-		17.528	Jun 2018	-		17.528	0.000	17.528	0.000
Subtotal			0.000	-		-		17.528		-		17.528	0.000	17.528	0.000
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	TBD	TBD : Aberdeen Proving Ground, MD	0.000	-		0.750	May 2017	1.125	Jan 2018	-		1.125	0.000	1.875	0.000
Government Engineering - MFEW Air	MIPR	TBD : Aberdeen Proving Ground, MD	0.000	-		1.500	May 2017	1.040	Jan 2018	-		1.040	0.000	2.540	0.000
Technical Support - MFEW Air	TBD	TBD : Aberdeen Proving Ground, MD	0.000	-		1.323	May 2017	0.331	Jan 2018	-		0.331	0.000	1.654	0.000
Contractor Engineering - MFEW Ground	TBD	TBD : Aberdeen Proving Ground, MD	0.000	-		-		2.088	Jan 2018	-		2.088	0.000	2.088	0.000

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: FY 2018 Army</b>													<b>Date:</b> May 2017		
<b>Appropriation/Budget Activity</b> 2040 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>				<b>Project (Number/Name)</b> DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>					
<b>Support (\$ in Millions)</b>				<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Government Engineering - MFEW Ground	MIPR	TBD : Aberdeen Proving Ground, MD	0.000	-		-		1.507	Jan 2018	-		1.507	0.000	1.507	0.000
Technical Support - MFEW Ground	TBD	TBD : Aberdeen Proving Ground, MD	0.000	-		-		0.250	Jan 2018	-		0.250	0.000	0.250	0.000
<b>Subtotal</b>			0.000	-		3.573		6.341		-		6.341	0.000	9.914	0.000
			<b>Prior Years</b>	<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			0.000	-		3.969		24.310		-		24.310	0.000	28.279	-
<b>Remarks</b>															

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army																	Date: May 2017												
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)									
2040 / 5										PE 0604270A / <i>Electronic Warfare Development</i>										DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>									
Event Name	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				
	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	
MS B Documentation Preparation (Air)																													
(1) Request For Proposal (RFP) Decision Point (Air)																													
(2) Milestone B (Air)																													
MFEW Development (Air)																													
Developmental Test (DT)/Flight Testing (Air)																													
(3) Milestone C (Air)																													
Operational Assessment (OA) (Air)																													
IOTE (Air)																													
MFEW Development (Ground)																													

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> FY 2018 Army			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
MS B Documentation Preparation (Air)	3	2017	3	2018
Request For Proposal (RFP) Decision Point (Air)	1	2018	1	2018
Milestone B (Air)	3	2018	3	2018
MFEW Development (Air)	3	2018	4	2020
Developmental Test (DT)/Flight Testing (Air)	4	2019	1	2022
Milestone C (Air)	3	2021	3	2021
Operational Assessment (OA) (Air)	3	2020	3	2020
IOTE (Air)	4	2021	4	2021
MFEW Development (Ground)	3	2018	4	2022

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army										Date: May 2017		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) ET7 / <i>Radio Frequency Interference Mitigation</i>			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
ET7: <i>Radio Frequency Interference Mitigation</i>	-	0.000	4.151	4.454	-	4.454	4.356	2.674	2.079	3.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

FY 2018 Funding reflects project ET7 increase of .145 million in support of Interference Cancellation (IC) Light technology and IC algorithm technology development efforts.

**A. Mission Description and Budget Item Justification**

Radio Frequency Interference Mitigation (RIM) is a cross cutting capability to centrally manage and provide oversight to identify, define, test, and coordinate development of Radio Frequency (RF) interference mitigation material solutions to resolve mutual RF interference and electromagnetic fratricide for Spectrum Dependent Systems (SDS).

Centralized management of RIM offers a holistic approach for identification, system of systems engineering, developmental testing, and maturing of RIM solutions to address current and evolving RF interference issues. User and acquisition communities will synchronize, integrate, and codify RIM requirements to facilitate the cross cutting approach necessary for the efficient procurement of common RIM products. This approach will eliminate the need for separate hardware and platform integration research and development efforts for SDS and platforms. An integrated approach will eliminate the need for separate hardware and platform integration research and development efforts for SDS and platform Program Managers. RIM products are intended to preserve the investment that the Army has made in current Electronic Warfare (EW) and Mission Command Transport SDS and provide a strategy for future efforts for new SDS development with integrated RIM solutions.

**Justification:**

FY 2018 Base funds in the amount of \$4.454 million will provide engineering support activities to continue the development of Interference Cancellation (IC) Light technology and develop the IC Algorithm technology to mitigate interference between Force Protection and Communication systems.

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

	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
<b>Title:</b> RF Interference Mitigation	-	4.151	4.454
<b>Description:</b> RIM is a System of Systems Enterprise approach that will allow Spectrum Dependent Systems to co-exist with Force Protection assets.			
<b>FY 2017 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Army		<b>Date:</b> May 2017	
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> ET7 / <i>Radio Frequency Interference Mitigation</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2016</b>	<b>FY 2017</b>
Funds provide engineering support activities to develop tunable filters to mitigate interference between Force Protection and Communication systems.			
<b>FY 2018 Plans:</b> Continue IC development, award IC algorithm development, and provide engineering support.			
<b>Accomplishments/Planned Programs Subtotals</b>		-	4.151
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A			
<b>Remarks</b>			
<b>D. Acquisition Strategy</b> Radio Frequency (RF) Interference Mitigation (RIM) will follow a System of Systems, enterprise strategy to develop and test hardware solutions such as tunable filters, Interference Cancellers (IC) to address RF interference on Army platforms. Designated platforms will procure, integrate and test RIM solutions with their association spectrum dependent systems.  The RIM acquisition strategy shifted focus from tunable filter technology to IC technology. The decision to shift focus from tunable filters to IC technology was a direct result of the S&T community accelerating the technical maturity. IC technology will enhance the warfighters ability to utilize the spectrum compared to tunable filter technology. Planned Developmental Testing (DT) in FY18 for the tunable filters is no longer required based on the change in the acquisition strategy.			
<b>E. Performance Metrics</b> N/A			



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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
VS6: <i>Integrated Electronic Warfare Systems</i>	-	9.847	9.682	9.787	-	9.787	9.942	10.098	10.257	5.571	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note FY 2018 Funding reflect project VS6 decrease in the amount of (.031) million, a result of realignment of program requirements.												
A. Mission Description and Budget Item Justification Counter Radio Controlled Improvised Explosive Device (RCIED) Electronic Warfare (CREW) provides for protection for ground forces operating in vehicle convoys, single vehicle operations and fixed locations in all theatres of operations. It is programmable to migrate with the evolving threat and provides non-lethal capabilities which enable freedom of movement across depth/breadth of the operational environment.  Justification: FY2018 Base dollars in the amount of \$9.787 million continues to support the development of CREW Relevancy technologies.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018	
Title: IEWS									9.847	9.682	9.787	
Description: The IEW System (IEWS) Systems of Systems (SoS) will consist of Electronic Warfare Planning and Management Tool (EWPMT), Multi-Function EW (MFEW), and Defensive Electronic Attack (DEA).												
FY 2016 Accomplishments: CREW Relevancy: Awarded a five year indefinite delivery indefinite quantity (IDIQ) contract for development of advanced techniques, enhanced force protection, SAASM compliance, improved interoperability with comms systems, and testing.												
FY 2017 Plans: CREW Relevancy: Continue the development and testing of HW/SW solutions for CREW-2 Duke.												
FY 2018 Plans: CREW Relevancy: Continue the development and testing of HW/SW solutions for CREW-2 Duke, specifically, development for the Secondary Unit system upgrade.												
Accomplishments/Planned Programs Subtotals									9.847	9.682	9.787	

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army									Date: May 2017		
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>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• CREW: VA8000 CREW	2.960	-	-	-	-	-	-	-	-	0	2.960
Remarks											
D. Acquisition Strategy											
CREW Relevancy will provide for the continued growth and conduct of research, development and testing against emerging Radio Controlled Improvised Explosive Device (RCIED) threats. Continuing research, development and testing will allow the technology to remain relevant and responsive to all approved user requirements.											
Award five year indefinite delivery indefinite quantity (ID/IQ) contract enables maximum flexibility as technology matures and as the RCIED threat changes. Cost Plus Fixed Fee (CPFF) ID/IQ Task Orders will be awarded throughout the five year effort to address the developing threat with system improvements.											
E. Performance Metrics											
N/A											