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**Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	5.792	18.843	34.642	-	34.642	61.215	82.223	83.159	49.061	Continuing	Continuing
DX5: <i>Electronic Warfare And Management Tool</i>	-	1.913	8.641	19.440	-	19.440	22.408	20.664	20.878	0.330	Continuing	Continuing
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	0.000	0.000	1.369	-	1.369	24.525	47.194	49.437	36.322	Continuing	Continuing
ET7: <i>Radio Frequency Interference Mitigation</i>	-	0.000	0.000	4.151	-	4.151	4.309	4.220	2.528	1.926	Continuing	Continuing
VS6: <i>Integrated Electronic Warfare Systems</i>	-	3.879	10.202	9.682	-	9.682	9.973	10.145	10.316	10.483	Continuing	Continuing

**Note**

Projects DX6 and ET7 are new start programs in FY17.

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

FY 2017 budget request funds Electronic Warfare Development. 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 three program lines of effort: 1) Project DX5 is Electronic Warfare Planning and Management Tools (EWPMT), 2) Project DX6 is Multi-Function EW (MFEW), and 3) Project VS6 Counter Radio-Controlled Improvised Explosive Devices (RCIED) Electronic Warfare (CREW) which provides current defensive electronic attack capability. Project ET7 is Radio Frequency Interference Mitigation (RIM) to resolve radio frequency interference and electromagnetic fratricide and enable 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 - Multi-Function EW Airborne (MFEW-Air) is a 3 variant system of systems EW payload that will provide Offensive Electronic Attack (OEA) and Electronic Warfare Support (ES) from Tactical to Operational levels. 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 electromagnetic spectrum (EMS) in order to execute successful unified land operations. These

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2017 Army	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604270A / <i>Electronic Warfare Development</i>
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capabilities give the commander a competitive advantage by denying, degrading or modifying the enemy's ability to conduct command and control, ISR, and targeting, and allows the commander to optimize effects within the EMS at the time and place of their choosing.

Project ET7 – RIM will provide 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 SDS.

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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2015</u></b>	<b><u>FY 2016</u></b>	<b><u>FY 2017 Base</u></b>	<b><u>FY 2017 OCO</u></b>	<b><u>FY 2017 Total</u></b>
Previous President's Budget	5.999	18.843	16.413	-	16.413
Current President's Budget	5.792	18.843	34.642	-	34.642
Total Adjustments	-0.207	0.000	18.229	-	18.229
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-0.207	-	18.229	-	18.229

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army										<b>Date:</b> February 2016		
<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>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
<i>DX5: Electronic Warfare And Management Tool</i>	-	1.913	8.641	19.440	-	19.440	22.408	20.664	20.878	0.330	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**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:  
FY2017 funds in the amount of \$19.440 million will provide Capability Drop 2 (CD2) development, initial test and support activities for the EWPMT program.

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

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> EWPMT	1.913	8.641	19.440
<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 2015 Accomplishments:</b> Funds provide for test support activities and Product Management office operations for the EWPMT program.			
<b>FY 2016 Plans:</b> Funds provide for next Capability Drop (CD) development, integration, test support activity and Product Management Office operations for EWPMT program.			
<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>Accomplishments/Planned Programs Subtotals</b>	1.913	8.641	19.440

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army		<b>Date:</b> February 2016
<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>

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA: <i>K00002 - EW Planning &amp; Management Tools (EWPMT)</i>	-	2.556	3.235	-	3.235	5.805	5.947	6.061	19.135	Continuing	Continuing

**Remarks**

**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: PB 2017 Army												Date: February 2016			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0604270A / <i>Electronic Warfare Development</i>				DX5 / <i>Electronic Warfare And Management Tool</i>							
<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	Allot	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	0.013	0.148	Mar 2015	0.804	Oct 2015	1.112	Dec 2016	-		1.112	Continuing	Continuing	0
<b>Subtotal</b>			0.013	0.148		0.804		1.112		-		1.112	-	-	0.000
<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 CD2	C/IDIQ	Raytheon : Fort Wayne, IN	0.000	-		6.000	Feb 2016	14.170	Feb 2017	-		14.170	Continuing	Continuing	0
<b>Subtotal</b>			0.000	-		6.000		14.170		-		14.170	-	-	0.000
<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	1.765	Dec 2015	-		3.432	Dec 2016	-		3.432	Continuing	Continuing	0
<b>Subtotal</b>			0.000	1.765		-		3.432		-		3.432	-	-	0.000
<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	-		1.837	Nov 2015	0.726	Aug 2017	-		0.726	Continuing	Continuing	0
<b>Subtotal</b>			0.000	-		1.837		0.726		-		0.726	-	-	0.000

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2017 Army</b>								<b>Date:</b> February 2016			
<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>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>		<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Project Cost Totals</b>	0.013	1.913	8.641		19.440	-	19.440	-	-	0.000	

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army** **Date:** February 2016

<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>
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Event Name	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021							
	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																																
(1) Test CD 1 (Government Confidence test)									▲ 1																							
(2) MSC / Limited Fielding Decision of CD1									▲ 2																							
CD1 Fielding																																
Development and Test of CD2																																
(3) Test CD2 (Government Confidence test)																	▲ 3															
Development and Test of Additional CDs																																
Fielding of Additonal CDs																																

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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2017 Army</b>		<b>Date:</b> February 2016
<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

Events	Start		End	
	Quarter	Year	Quarter	Year
EWPMT Contract	1	2014	1	2020
Development and Test of CD 1	4	2014	2	2016
Test CD 1 (Government Confidence test)	2	2016	2	2016
MSC / Limited Fielding Decision of CD1	3	2016	3	2016
CD1 Fielding	4	2016	4	2017
Development and Test of CD2	2	2016	2	2018
Test CD2 (Government Confidence test)	4	2017	4	2017
Development and Test of Additional CDs	1	2018	4	2021
Fielding of Additonal CDs	1	2018	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army										<b>Date:</b> February 2016		
<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>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	0.000	0.000	1.369	-	1.369	24.525	47.194	49.437	36.322	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This is a new start in FY2017.

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

Multi-Function EW Airborne (MFEW-Air) is a 3 variant system of systems EW payload that will provide Offensive Electronic Attack (OEA) and Electronic Warfare Support (ES) from Tactical to Operational levels. 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 electromagnetic spectrum (EMS) in order to execute successful unified land operations. These capabilities give the commander a competitive advantage by denying, degrading or modifying the enemy's ability to conduct command and control, ISR, and targeting, and allows the commander to optimize effects within the EMS at the time and place of their choosing.

Through a remote operated networked, layered, and integrated approach MFEW Air provides decisive non-lethal OEA capabilities against adversary C2, PNT, ISR, and Radar systems. MFEW Air will also provide the capability to sense the EME enabling the detection, location, and identification of friendly and adversary emitters operating within the Electromagnetic Environment (EME) significantly enhancing the commanders understanding of the EME within their AOR. MFEW Air variants will consist of Air Large (Class IV UAS), Air Small (Class III), and Rotary wing payloads that retain the capability to operate independently but when integrated into a system of systems layered approach that also include the MFEW Ground variants will provide extended target frequency range coverage, increased target geolocation precision, increased target standoff range, and increased persistence on target in all weather conditions day or night.

Justification:

FY2017 Base dollars in the amount of \$1.369 million will fund statutory and regulatory Milestone/Contract documentation preparation and Program Management Support. This project is a new start in FY2017.

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

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> Multi-Function EW (MFEW) is a System of Systems that will provide the BCT Commander with an offensive Electronic Attack (EA) and Electronic Support (ES).	-	-	1.369
<b>Description:</b> MFEW: Develop MS B documentation in support of FY2018 Milestone B.			
<b>FY 2017 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army		<b>Date:</b> February 2016
<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 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
MFEW: Develop MS B documentation in support of FY2018 Milestone B.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	1.369

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

N/A

**Remarks**

**D. Acquisition Strategy**

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 Support (ES), and Defensive Electronic Attack (DEA) capability and some defensive electronic attack. 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 3QFY18.

**E. Performance Metrics**

N/A



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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army** **Date:** February 2016

<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>
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Event Name	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021											
	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 Large)																																				
(1) Request For Proposal (RFP) Decision Point (Air Large)																					▲ 1															
(2) Milestone B (Air Large)																									▲ 2											
(3) Development Contract Award (Air Large)																									▲ 3											
MFEW Development (Air Large)																																				
(4) Milestone C (Air Large)																									▲ 4											
Developmental Test (DT)/Flight Testing (Air Large)																																				
Operational Assessment (OA) (Air Large)																													■							
IOTE (Air Large)																													■							

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Army		<b>Date:</b> February 2016
<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

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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army										<b>Date:</b> February 2016		
<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>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
<i>ET7: Radio Frequency Interference Mitigation</i>	-	0.000	0.000	4.151	-	4.151	4.309	4.220	2.528	1.926	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This project is a new start in FY17.

**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 2017 Base funds in the amount of \$4.151 million will provide engineering support activities to develop tunable filters to mitigate interference between Force Protection and Communication systems. This project is a new start in FY17.

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

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> RF Interference Mitigation	-	-	4.151
<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> Funds provide engineering support activities to develop tunable filters to mitigate interference between Force Protection and Communication systems.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	4.151

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army		<b>Date:</b> February 2016
<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>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 integrated hardware filters and mounts to mitigate RF interference on Army platforms. RIM is developing materiel solutions (test articles) for designated platforms to ensure compatibility among electronic warfare and communication systems. Designated platforms will procure and integrate RIM material solutions within their Weapon System technologies.		
<b>E. Performance Metrics</b> N/A		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army** **Date:** February 2016

<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>
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<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	MIPR	PM Electronic Warfare & Cyber : APG, MD	0.000	-		-		0.400	Jan 2017	-		0.400	Continuing	Continuing	0
<b>Subtotal</b>			0.000	-		-		0.400		-		0.400	-	-	0.000

<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 Articles	TBD	TBD : TBD	0.000	-		-		2.295	Jun 2017	-		2.295	Continuing	Continuing	0
<b>Subtotal</b>			0.000	-		-		2.295		-		2.295	-	-	0.000

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 Support	Allot	Various : Various	0.000	-		-		1.456	Mar 2017	-		1.456	Continuing	Continuing	0
<b>Subtotal</b>			0.000	-		-		1.456		-		1.456	-	-	0.000

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		0.000	-	0.000	4.151	-	4.151	-	-	0.000

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army** **Date:** February 2016

<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>
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Event Name	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
Development for Tunable Filters (Test Articles)									Develop Tunable Filters																			
(1) Developmental Testing for Tunable Filters																					▲ 1							
Development for Interference Cancellation Technologies (ICT)																	Develop ICT											
(2) Developmental Testing for ICT																					▲ 2							

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Army		<b>Date:</b> February 2016
<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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development for Tunable Filters (Test Articles)	3	2017	4	2019
Developmental Testing for Tunable Filters	2	2018	2	2019
Development for Interference Cancellation Technologies (ICT)	2	2018	4	2021
Developmental Testing for ICT	2	2019	2	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army										<b>Date:</b> February 2016		
<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> VS6 / <i>Integrated Electronic Warfare Systems</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
VS6: <i>Integrated Electronic Warfare Systems</i>	-	3.879	10.202	9.682	-	9.682	9.973	10.145	10.316	10.483	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**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: FY2017 Base dollars in the amount of \$9.682 million continues to support the development of CREW relevancy, hardware/software, including incorporation of advanced techniques development against emerging and global threats, enhanced networking capability, incorporate Systems Security Engineering (SSE), integrating Electronic Warfare Planning Capability, and Program Management Support.

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

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> IEWS	3.879	10.202	9.682
<b>Description:</b> 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).			
<b>FY 2015 Accomplishments:</b> CREW Relevancy: Operational Testing of DTI hardware and develop contract documentation in support of relevancy contract.			
<b>FY 2016 Plans:</b> CREW Relevancy: Award development contract and begin developing Hardware/Software solutions to ensure systems remain relevant against Global Threats.			
<b>FY 2017 Plans:</b> CREW Relevancy: Continue the development and testing of HW/SW solutions for CREW-2 Duke.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.879	10.202	9.682

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

<b>Line Item</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• CREW: VA8000 CREW	-	2.960	-	-	-	-	-	-	-	0	2.960

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Army		<b>Date:</b> February 2016
<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> VS6 / <i>Integrated Electronic Warfare Systems</i>

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**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.

A five year indefinite delivery indefinite quantity contract will be awarded on a competitive basis. This will enable maximum flexibility as the technology matures and as the threat changes.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army** **Date:** February 2016

<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> VS6 / <i>Integrated Electronic Warfare Systems</i>
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<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	4.956	0
Program and Technical Assistance support	C/CPFF	TBD : Aberdeen Proving Ground, MD	3.789	-		-		-		-		-	0	3.789	0
PMO Staff/Travel for CREW-2 Program Office	Allot	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	0.498	0.361	Oct 2014	0.822	Oct 2015	0.675	Oct 2016	-		0.675	0	2.356	0
<b>Subtotal</b>			9.243	0.361		0.822		0.675		-		0.675	0.000	11.101	0.000

<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	38.318	0
IEWS Engineering and Development	MIPR	I2WD : Aberdeen MD	5.557	-		-		-		-		-	0.000	5.557	0.000
Risk Reduction Studies for MFEW	MIPR	Various : Various	7.969	-		-		-		-		-	0.000	7.969	0
Develop CREW H/W and S/W solutions	C/CPFF	TBD : TBD	0.000	0.297	Feb 2016	7.635	Feb 2016	6.066	Feb 2017	-		6.066	0	13.998	0
<b>Subtotal</b>			51.844	0.297		7.635		6.066		-		6.066	0.000	65.842	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army** **Date:** February 2016

<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> VS6 / <i>Integrated Electronic Warfare Systems</i>
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	2.046	0
Government Engineering Support	MIPR	CERDEC : Aberdeen Proving Ground, MD	3.314	0.855	Dec 2014	-		-		-		-	0	4.169	0
EWPMT Architecture Study	MIPR	Various : Various	1.194	-		-		-		-		-	0	1.194	0
CREW-2 Engineering support	C/CPFF	Various : Various	0.125	0.992	Dec 2014	0.822	Nov 2015	1.278	Nov 2016	-		1.278	0	3.217	0
CREW-2 Government Engineering	MIPR	Various : Various	0.427	0.859	Feb 2015	0.923	Nov 2015	0.538	Nov 2016	-		0.538	0	2.747	0
<b>Subtotal</b>			7.106	2.706		1.745		1.816		-		1.816	0.000	13.373	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0
Operational Assessment (OA) of DV4 systems	MIPR	Yuma Proving Ground : Yuma, AZ	1.950	-		-		-		-		-	0	1.950	0
Continuous evaluation of CREW-2 technologies	MIPR	Yuma Proving Ground Yuma, AZ : YPG, AZ	0.000	0.515	Apr 2015	-		1.125	Mar 2017	-		1.125	0	1.640	0
<b>Subtotal</b>			3.046	0.515		-		1.125		-		1.125	0.000	4.686	0.000

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		71.239	3.879	10.202	9.682	-	9.682	0.000	95.002	0.000

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army** **Date:** February 2016

<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> VS6 / <i>Integrated Electronic Warfare Systems</i>
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Event Name	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
CREW Relevancy Development Contract Award					■																							
CREW Relevancy Task Order 1					Award																							
CREW Relevancy Task Order 2																												
CREW Relevancy Task Order 3																												
Continuous evaluation of CREW Relevancy																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Army		<b>Date:</b> February 2016
<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> VS6 / <i>Integrated Electronic Warfare Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CREW Relevancy Development Contract Award	2	2016	2	2016
CREW Relevancy Task Order 1	2	2016	2	2018
CREW Relevancy Task Order 2	2	2018	2	2020
CREW Relevancy Task Order 3	2	2020	2	2021
Continuous evaluation of CREW Relevancy	2	2017	4	2021