

ARCHIVED REPORT

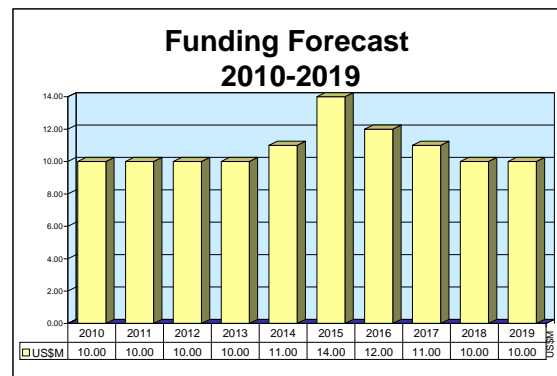
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Advanced Comm ECM Demo

Outlook

- Based on a projection of the FY11 program budget, an estimated \$108 million will likely be spent on the program through the 10-year forecast period
- R&D program develops applications to improve location and identification of modern tactical battlefield radio frequency transmissions, including communications equipment and radar



Orientation

Description. R&D program to develop an advanced technology base to locate and identify battlefield radio frequency transmissions.

Status. Technology base development.

Application. Development of an electronic warfare technology base.

Sponsor

U.S. Army
 Army Communications-Electronics RD&E Center,
 Intelligence and Information Warfare Directorate
 (I2WD)
 Fort Monmouth, NJ
 USA

Technical Data

The Advanced Communications Electronic Countermeasures Demonstration (Advanced Comm ECM Demo) project is part of the U.S. Army Electronic Warfare Technology program – PE#0603270A. The program element designs and develops electronic warfare technologies that deny, disrupt, or degrade the enemy's use of electromagnetic spectrum for offensive or defensive operations. Technology development focuses on future needs, but upgrades current equipment where applicable. A particular emphasis is placed on asymmetric warfare.

identify modern tactical battlefield radio frequency transmissions. These transmissions include communications equipment as well as radar. The project also funds networked electronic warfare, which provides lightweight, low-cost unmanned aerial systems and unattended ground sensors electronic support measures to detect and locate modern signals of interest. The project designs, develops, and demonstrates communications countermeasures and counter-countermeasures technologies to first intercept, identify, and locate tactical communications and then manipulate threat computer networks and their components.

The Advanced Comm ECM Demo project – K15 – matures and demonstrates technology to locate and

Advanced Comm ECM Demo

Program Review

The Advanced Comm ECM Demo project provides autonomous detection classification, correlation, and geo-location capability against modern wireless emitters and other threats. It also matures and demonstrates combat identification technologies for lightweight vehicles and soldiers.

In FY07, project funds were used to demonstrate unmanned aircraft system (UAS) and ground-based electronic support measures (ESM) in high emitter density environments such as found in urban areas.

Plans included integrating commercial off-the-shelf (COTS) visualization and mapping tools with geo-location solution sets to improve urban situational awareness. Funds would also pay for integrating capabilities that combine jamming and detection/locating/neutralization capabilities. The project would mature and demonstrate the soldier radio waveform (SRW) as a radio-based application that would provide target identification and situational awareness (SA).

FY08 funds were used to conduct developmental tests of surgical EW techniques, and to mature and demonstrate the SRW as a radio-based application to provide target identification and SA capability to light vehicles. The program would also integrate COTS 3-D visualization and mapping tools with geo-location solutions for urban SA.

Program funds in FY10 were used to develop and mature algorithms and high-fidelity models to integrate electronic attack/computer network operations capabilities to allow planners to engage multi-node, multi-waveform, multi-platform, and cyber targets in a distributed and coordinated fashion.

In addition, FY10 funds were used to analyze and design an optimum sensor mix to detect, identify, map, and track targets, which may include humans, vehicles, communications devices, unexploded ordnance, concealed weapons/concealed explosives, and booby traps.

Funding

	U.S. FUNDING							
	FY10 <u>QTY</u>	FY10 <u>AMT</u>	FY11 <u>QTY</u>	FY11 <u>AMT</u>	FY12 <u>QTY</u>	FY12 <u>AMT</u>	FY13 <u>QTY</u>	FY13 <u>AMT</u>
RDT&E (U.S. Army)								
PE#0603270A EW Technology								
K15 Advanced Comm ECM Demo	-	9.3	-	9.3	-	9.5	-	9.7
	<u>FY14 QTY</u>	<u>FY14 AMT</u>	<u>FY15 QTY</u>	<u>FY15 AMT</u>				
PE#0603270A EW Technology								
K15 Advanced Comm ECM Demo	-	11.3	-	14.0				

All \$ are in millions.

Source: FY11 U.S. budget documents

Timetable

<u>Year</u>	<u>Major Development</u>
FY07	Demonstrate ESM in high emitter density environments
FY08	Conduct developmental tests of surgical EW techniques
FY09	Mature and demonstrate SRW to provide target ID and situational awareness

Worldwide Distribution/Inventories

This is a **U.S.** Army program.

Forecast Rationale

Funding for the Advanced Comm ECM Demo project will remain stable throughout the forecast period. The U.S. government is funding applications to improve location and identification of modern tactical battlefield radio frequency transmissions. These transmissions include communications equipment, as well as radar.

The ability to intercept, identify, and locate enemies on the battlefield via electronic signals is becoming

increasingly important, ensuring the U.S. Army's commitment to fund this program well into the future. With the growing importance of battlefield electronic support measures, funding is expected to continue at an even level throughout the forecast period.

Based on a projection of the FY11 program budget, an estimated \$108 million will likely be spent on the program through the 10-year forecast period.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR RDT&E FUNDING (in millions \$)												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
MFR Varies												
Advanced Comm ECM Demo <> United States <> Army												
	47.75	10.00	10.00	10.00	10.00	11.00	14.00	12.00	11.00	10.00	10.00	108.00
Total	47.75	10.00	10.00	10.00	10.00	11.00	14.00	12.00	11.00	10.00	10.00	108.00