

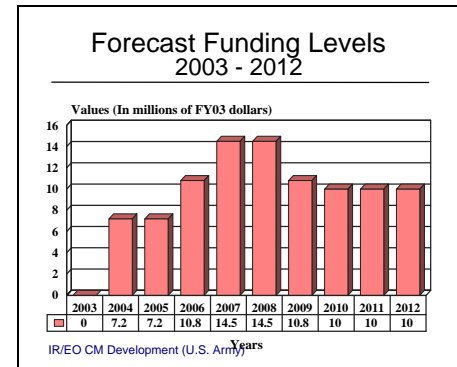
ARCHIVED REPORT

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IR/EO CM Development (Army) - Archive 12/2004

Outlook

- Program remains active throughout forecast period
- Funding varies as programs transition to separate/independent efforts
- As projects transition in or out, funding will change



Orientation

Description. PE#0604270A funds most of the U.S. Army electronic warfare development effort, with Project D665 identified for IR/EO countermeasures development work.

Sponsor

U.S. Army
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(CECOM)
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Ft. Monmouth, New Jersey (NJ) 07703-5000
USA
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Contractors

Contractors change as the project develops and changes.

Status. Technology base development.

Total Produced. This is a technology development program only.

Application. The electronic warfare program supports the development of both ground and airborne systems that will deny hostile forces the ability to effectively use their command and control capabilities. The IR/EO CM effort is currently focused on aircraft protection.

Price Range. Indeterminate

Contractors

The contractors change as projects develop.

Technical Data

This program encompasses advanced and engineering development of tactical electronic warfare, signal warfare (SW), aircraft survivability equipment (ASE),

battlefield deception, and rapid software reprogramming technologies for the protection of personnel and equipment from hostile artillery. The systems de-

veloped under this program will provide the Army with the capability to degrade or deny hostile forces the effective use of their communications, counter-mortar/counter-battery radars, surveillance radars, infrared/optical battlefield surveillance systems, and electronically fuzed munitions.

The goal of the program is to satisfy the requirements of brigade, division, corps, and higher commanders for

conducting electronic and electro-optical countermeasure operations. ASE-identified efforts provide for the development and system integration of survivability equipment to meet tactical and Special Electronic Mission Aircraft (SEMA) requirements, along with attack/scout, and assault/cargo mission requirements.

Variants/Upgrades

This program develops technology that can be used to upgrade existing systems.

Program Review

Background. Information is based on the latest Program Descriptive Summary.

Project D665 – Aircraft Survivability Equipment Development. This project provided for the development and system integration of ASE to achieve survivability, reduce vulnerability, and enhance combat effectiveness to fulfill all Army aircraft mission requirements.

Efforts in development include new or upgraded systems to counter monopulse, millimeter wave, frequency agile, pulse Doppler, and continuous wave radars, passive infrared missile seekers, and laser-directed weapon systems. Continual adjustments are made to meet the changing and evolutionary nature of technology and threat. This project has joint service applications that are coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTCG/AS), as well as NATO applications coordinated through the Department of Defense.

This project has provided the technical base for electronic warfare equipment for Apache, Black Hawk, Chinook, Comanche, and Special Operations aircraft, including the Suite of Integrated Radio Frequency Countermeasures (SIRFC) and Advanced Threat Infrared Countermeasures (ATIRCM). Systems developed under this project are also necessary to the survival of AH-64, MH-47E, MH-60K, RC-12K, EH-60, UH-60, and CH-47D aircraft.

The ATIRCM program was designated a tri-service program. The Air Force Special Operations Command (AFSOC) selected ATIRCM/CMWS for the CV-22. ATIRCM/CMWS is an IR countermeasure system designed to provide U.S. Army aircraft with the latest and most sophisticated state-of-the-art technologies available in order to improve their chances of survival on the modern digital battlefield.

From FY91 through FY01, an estimated US\$83.895 million went into ATIRCM/CMWS engineering and

manufacturing development (EMD). This project was funded at US\$7.1 million in FY02, with the most recent funding of US\$9.3 million programmed in FY03.

Project DL20 – Advanced Threat Infrared Countermeasures/Common Missile Warning Systems (ATIRCM/CMWS) Development. This was a new start in FY00. Previous funding was provided under Project D665, Aircraft Survivability Equipment Development.

ATIRCM/CMWS is a U.S. Army program to develop, test, and integrate defensive infrared countermeasures capabilities into current-generation host platforms, including the MH-60/MH-47, AH-64D, UH-60 and CH-47F, for more effective protection against a greater number of IR guided missile threats than afforded by currently fielded IR countermeasures. The U.S. Army operational requirements concept for IR countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). It is an integrated warning and countermeasure system to enhance aircraft survivability against IR guided threat missile systems.

The core element of the SIIRCM concept is the Advanced Threat Infrared Countermeasure (ATIRCM), Common Missile Warning System (CMWS) program. The ATIRCM/CMWS, a subsystem to a host aircraft, is an integrated ultra-violet (UV) missile warning system and an IR Lamp/Laser Jamming and Improved Countermeasure Dispenser (ICMD).

The CMWS also functions as a stand-alone system with the capability to detect missiles and provide audible and visual warnings to the pilot(s), and, when installed with the ICMD, activates expendables to provide a degree of protection. ATIRCM/CMWS is the key infrared survivability system for Army Objective Force aircraft. It supports the Legacy-to-Objective transition path of the Transformation Campaign Plan.

FY02 funding included US\$16.067 million for continuing the ATIRCM/CMWS contract testing and producibility support. US\$600,000 was programmed

for modeling and simulation efforts, with US\$16.4 million going toward the purchase of six ATIRCM systems for MH-47 and MH-60 IOT&E. US\$3.7 million was used to complete development and operational testing for the ATIRCM MH-47, with US\$2.6 million programmed for the test facility.

No funding was programmed for FY03. FY04 budgets US\$5.5 million for operational test support and demonstrations. A total of US\$1.7 million in FY04 and US\$7.2 million in FY05 is to be used for laser miniaturization. It should be noted that FY04/05 funding completes operational test support as well as initial P³I efforts in support of laser miniaturization.

Acquisition Strategy. The EMD contract was competitively awarded in FY95. Limited Procurement Urgent (LPU) for acquisition of the CMWS capability for Special Operations Force (SOF) aircraft was approved in March 2002. Renewed funding supports a new acquisition strategy of buying CMWS separately from ATIRCM, while installing A-kits on all modernized aircraft. In addition to operational test support, both FY04 and FY05 RDT&E funds support ATIRCM/CMWS P³I efforts. These efforts support growth to Tier 2 and 3 (missiles) threats, miniaturization, and all band laser capabilities. RDT&E efforts also include the incorporation of multi-band fiber optics, and the provision of an enhanced flare capability.

Funding

	U. S. FUNDING							
	<u>FY02</u>		<u>FY03</u>		<u>FY04 (Req)</u>		<u>FY05 (Req)</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
RDT&E (USA)								
PE#0604270A EW Development								
ATIRCM/CMWS	-	39.4	-	0.0	-	7.2	-	7.2
RDT&E (USA)								
Proj. DL20	-	10.8	-	14.5	-	14.5	-	10.8

All US\$ are in millions.

Recent Contracts

No recent contracts have been identified.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
4Q	FY94	Complete ATIRCM Dem/Val
1Q	FY98	ATIRCM/CMWS EMD
4Q	FY02	Complete ATIRCM/CMWS EMD, effort transferred to USSOCOM
	FY00-01	ATIRCM/CMWS EMD contract, development testing
Early	2002	Operational assessment
Mar	2002	Contract for 26 units for SOF deployed to Operation Enduring Freedom
3Q	FY03	ATIRCM/Jam Head LRIP
Sep	2003	Complete SOF Enduring Freedom installations
2-4Q	FY04	IOT&E, ATIRCM miniaturization start
1Q	FY05	CMWS full-rate production
2Q	FY05	ATIRCM full-rate production
4Q	FY07	ATIRCM miniaturization development complete
1-4Q	FY06-09	Tier 2/3
1Q	FY04	First Unit Equipped (planned)

Worldwide Distribution

This program is primarily a U.S. Army effort, although some of the developments have possible NATO application.

Forecast Rationale

This program element funds the Army's priority electronic warfare effort aimed at improving the protection of the Army's combat and support aircraft. It develops protection techniques for Special Operations and Special Mission aircraft, as these will face the most intense threat in combat. Some of the developments will find their way into support and utility airframes.

The focus will be revised as threat assessment results are converted into developmental efforts. As active projects are completed, the follow-on effort will be transferred to the platform lines for procurement and follow-on development.

The ATIRCM/CMWS program combines the resources of all three services in order to meet a common need for protection. Development efforts have Air Force support, although planners backed away from production.

The forecast is based on this PE continuing as established, and is based primarily on the work scheduled to be performed. It reflects the Army's decision to drop out of ATIRCM/CMWS. USSOCOM took it over; but the programs will soon be moving into production. The PE may be revised in the outyears, and new efforts started.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR FUNDING (\$ in millions)													
Designation	Application	Thru 02	High Confidence Level				Good Confidence Level				Speculative		Total 03-12
			03	04	05	06	07	08	09	10	11	12	
R/EO CM DEVELOP. (ARMY)	U.S. ARMY)	357.800	0.000	7.200	7.200	10.800	14.500	14.500	10.800	10.000	10.000	10.000	95.000