Counter-Rocket, Artillery, Mortar (C-RAM)/Indirect Fire Protection Capability (IFPC)

**INVESTMENT COMPONENT**

| Modernization | Recapitalization | Maintenance |

**MISSION**
Integrates multiple Army- and DoD-managed systems and commercial-off-the-shelf systems with a command and control (C2) system to provide protection of fixed and semi-fixed sites from rockets and mortar rounds.

**DESCRIPTION**
The Counter-Rocket, Artillery, Mortar (C-RAM) System-of-Systems (SoS) was developed in response to a Multi-National Force-Iraq Operational Needs Statement (ONS) that was validated in September 2004. An innovative SoS approach was implemented in which multiple DoD Program of Record systems were integrated with commercial-off-the-shelf items to provide seven C-RAM functions: sense, warn, respond, intercept, C2, shape, and protect.

C-RAM component systems are:
- Forward Area Air Defense Command and Control (FAAD C2) system and Air and Missile Defense Workstation for “C2”;
- Lightweight Counter Mortar Radar and Firefinder Radars for “sense”;
- Land-based Phalanx Weapon System (LPWS) for “intercept”; and Wireless Audio/Visual Emergency System and a wireless LAN for “warn.” “Response” is provided thru C-RAM integration with Army/Joint mission command systems.

Using this SoS approach, C-RAM completed development, integration, and testing in April 2005, meeting the requirements of the ONS. The C-RAM system was fielded five months after initial funding and just eight months after ONS validation. C-RAM SoS is currently deployed in two theaters of operation.

In transition to the IFPC acquisition program, IFPC Increment 1 will field the C-RAM warn capability to all Army Brigade Combat Teams.

**SYSTEM INTERDEPENDENCIES**
Other Major Interdependencies
- Army and Marine Corps Battle Command Systems, Sentinel Radar
- Other

**PROGRAM STATUS**
- **1QFY11**: LPWS theater upgrades complete
- **1QFY11-4QFY11**: C-RAM sense and warn fielding to Operation Enduring Freedom (OEF)
- **1QFY11**: Near-term C-RAM initiatives approved as a result of 2010 Air and Missile Defense (AMD) Capability Portfolio Review (CPR)
- **3QFY11**: C-RAM Program Directorate transition to PEO Missiles and Space
- **3QFY11**: C-RAM SoS demonstration
- **Current**: Sustainment of fielded C-RAM SoS capability

**PROJECTED ACTIVITIES**
- **1QFY12**: Complete C-RAM sense and warn fielding to OEF
- **2QFY12**: Initiate C-RAM support to Department of State/Office of Security Cooperation-Iraq efforts
- **2QFY12**: Initiate development/test/integration for near-term C-RAM initiatives
- **2QFY12**: Conduct IFPC Increment 1 Operational Assessment
- **3QFY12**: IFPC Increment 1 Milestone C
- **4QFY13**: Field C-RAM intercept capability to 5-5 ADA Battalion
- **2QFY14**: Begin fielding C-RAM initiatives
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FOREIGN MILITARY SALES
Australia, United Kingdom

CONTRACTORS
Hardware/Integration/Fielding/
Contractor Logistics Support:
Northrop Grumman (Huntsville, AL)
LPWS:
Raytheon Missile Systems (Tucson, AZ)
Software Development/Maintenance:
Northrop Grumman (Redondo Beach, CA)
Common Hardware, Software:
General Dynamics (Taunton, MA)
Shelters and Training:
Northrop Grumman (Huntsville, AL)