

# 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 (COTS) 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) / Indirect Fire Protection Capability (IFPC) system-of-systems (SoS) was developed in response to a Multi-National Force-Iraq Operational Needs Statement (ONS) validated in September 2004. An innovative SoS approach was implemented in which multiple DoD acquisition program systems were integrated with COTS items to provide seven C-RAM functions: sense, warn, respond, intercept, C2, shape, and protect.

C-RAM component systems include the following: Forward Area Air Defense Command and Control (FAAD C2) and Air and Missile Defense Workstation (AMDWS) for C2; Lightweight Counter Mortar Radars (LCMR), Firefinder Radars, and Ka-band Multi-Function Radio Frequency Systems (MFRFS) for sense; Land-based Phalanx Weapon System (LPWS) and emerging Accelerated Improved Intercept Initiative (AI3) for intercept; Wireless warn; and a wireless Local Area Network (LAN) for comms integration of all components. Response is provided thru C-RAM integration with Army/ Joint mission command systems.

C-RAM sense and warn is currently deployed to forward operating bases (FOBs) in Iraq in support of Department of State/Office of Security Cooperation-Iraq (DoS/OSC-I) operations and in Afghanistan in support of Operation Enduring Freedom (OEF). C-RAM's sense and warn performance has been extremely successful, providing timely warning for more than 2,500 rocket and mortar attacks against C-RAM equipped FOBs, with minimum false warnings. Current ONS-based capability

enhancements include development/ deployment of Ka and Ku-band MFRFS sensors for detection of high/ low quadrant elevation rockets and improvised rocket assisted munitions, and an enhanced interceptor for improved mobility and extended range.

### SYSTEM INTERDEPENDENCIES

#### In this Publication

None

#### Other Major Interdependencies

Army and Marine Corps Battle Command Systems, Sentinel Radar

### PROGRAM STATUS

- **Current:** Sustainment of fielded C-RAM SoS capability in OEF and Iraq
- **1QFY12:** Completed C-RAM sense and warn fielding to OEF
- **1QFY12:** Initial Ka MFRFS declared fully operational in OEF
- **2QFY12:** Initiated support for C-RAM sense and warn for DoS/ OSC-I
- **2QFY12:** Approval of a Directed Requirement for the AI3
- **4QFY12:** Ka MFRFS fielding complete

### PROJECTED ACTIVITIES

- **1QFY13:** Deploy initial Ku MFRFS to OEF
- **1QFY14:** Conduct AI3 live fire testing

## ACQUISITION PHASE

Technology Development

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

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

### FOREIGN MILITARY SALES

Australia, United Kingdom

### CONTRACTORS

#### Hardware/Integration/Fielding/ Contractor Logistics Support:

Northrop Grumman (Huntsville, AL)

#### Land-based Phalanx Weapon System (LPWS):

Raytheon Missile Systems (Tucson, AZ)

#### Software Development/Maintenance:

Northrop Grumman (Redondo Beach, CA)

#### Lightweight Counter Mortar Radars (LCMR):

SRCTec Inc. (Syracuse, NY)

#### Common Hardware, Software:

General Dynamics (Taunton, MA)

