Guardrail Common Sensor (GR/CS)

INVESTMENT COMPONENT

- **Modernization**
- Recapitalization
- Maintenance

MISSION

Provides signals intelligence (SIGINT) collection and precision targeting that intercepts, collects, and precisely locates hostile communications intelligence radio frequency emitters and electronic intelligence threat radar emitters. Provides near-real-time info to tactical commanders in the Joint Task Force Area supporting full spectrum of operations (close in and deep look collections).

DESCRIPTION

The Guardrail Common Sensor (GR/CS) is a fixed-wing, airborne, SIGINT collection and precision targeting location system. It provides near-real-time information to tactical commanders in the corps/Joint task force/Brigade Combat Team (BCT) area of operations with emphasis on Indications and Warnings (I&W). It collects low-, mid-, and high-band radio signals and ELINT signals; identifies and classifies them; determines source location; and provides near-real-time reporting, ensuring information dominance to commanders. GR/CS uses a Guardrail Mission Operations Facility (MOF) for the control, data processing, and message center for the system. GR/CS includes:

- Integrated COMINT and ELINT collection and reporting
- Enhanced signal classification and recognition and precision emitter geolocation
- Near-real-time direction finding
- Advanced integrated aircraft cockpit
- Tactical Satellite Remote Relay System

A standard system has RC-12 aircraft flying operational missions in single ship or multiship operations. Up to three aircraft/systems simultaneously collect communications and electronics emitter transmissions and gather lines of bearing and time-difference-of-arrival data, which is transmitted to the Mission Operations Facility (MOF), correlated, and supplied to supported commands via NSA net.

Planned improvements through Guardrail modernization efforts support a full spectrum of operations. Enhancements include precision geo-location subsystem, the Communications High-Accuracy Location Subsystem-Compact (CHALS-C), with increased frequency coverage and a higher probability to collect targets; a modern COMINT infrastructure and core COMINT subsystem, providing a frequency extension, Enhanced Situational Awareness (ESA); a capability to process special high-priority signals through the high-end COMINT subsystems High Band COMINT (HBC) and X-Midas; and elimination of non-supportable hardware and software. Ground processing software and hardware are being upgraded for interoperability with the Distributed Common Ground System-Army (DCGS-A) architecture and Distributed Information Backbone.

SYSTEM INTERDEPENDENCIES

None

PROGRAM STATUS

- **2QFY11:** Fielded Aircraft #1, #2, to 1st MI
- **3QFY11:** Fielded Aircraft #3, #4 to 1st MI
- **4QFY11:** Fielded Aircraft #5 to 224th MI

PROJECTED ACTIVITIES

- **FY12-14:** Field the remaining 9 aircraft, retrofit aircraft 1 thru 9 with enhancement and begin de-fielding systems from Korea

ACQUISITION PHASE

Technology Development | Engineering and Manufacturing Development | Production and Deployment | **Operations and Support**

Guardrail Common Sensor (GR/CS)

FOREIGN MILITARY SALES
None

CONTRACTORS
System Integrator, ESA Subsystem, and MOF Software/System Support:
Northrop Grumman (Sacramento, CA)
Data Links:
L-3 Communications (Salt Lake City, UT)
CHALS-C:
Lockheed Martin (Owego, NY)
X-MIDAS Subsystem:
ZETA (Fairfax, VA)
HBC Subsystem:
ArgonST Radix (Mountain View, CA)