

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 & 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 with emphasis on Indications and Warnings (I&W). It collects low-, mid-, and high-band radio signals and electronic intelligence (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 multi-ship 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 MOF, correlated, and supplied to supported commands via NSANet.

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

- **1QFY12:** Fielded Aircraft #6 and 7 to 224th Military Intelligence Battalion
- **3QFY12:** Fielded Aircraft #8 to 224th Military Intelligence Battalion

PROJECTED ACTIVITIES

- **FY13-14:** Field the remaining six aircraft; retrofit aircraft 1-8 with enhancement; and begin defueling legacy systems

ACQUISITION PHASE

Technology Development

Engineering & Manufacturing Development

Production & Deployment

Operations & 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, Part of the Boeing Co.
(Mountain View, CA)

