

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.

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 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 Ground Baseline (GGB) for the control, data processing, and message center for the system. It includes:

- Integrated communications intelligence (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 (Systems 1, 2, 3, and 4)

A standard system has 8 to 12 RC-12 aircraft flying operational missions in sets of two or three. Up to three aircraft/systems simultaneously collect communications and noncommunications emitter transmissions and gather lines of bearing and time-difference-of-arrival data, which is transmitted to the GGB, correlated, and supplied to supported commands.

Planned improvements through Guardrail modernization efforts include an enhanced precision geolocation 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 subsystem; 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

DCGS-A

PROGRAM STATUS

- **3QFY08:** Initial CHALS-C flight test
- **1QFY09:** ESA factory acceptance test
- **3QFY09:** High band COMINT (HBC) factory acceptance test
- **4QFY09:** CHALS-C, ESA, HBC, and ELINT system flight test
- **3QFY10:** CHALS-C, ESA, HBC, and ELINT upgrades system assessment
- **3QFY10:** CHALS-C, ESA, HBC, and ELINT fieldings; GGB fieldings to the 224th Military Intelligence (MI), 3rd MI, 15th MI; initiating new contracts for additional GGB hardware
- **4QFY10:** ESA system assessment

PROJECTED ACTIVITIES

- **2QFY11:** Begin system fielding

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 GGB Software/System Support:**

Northrop Grumman (Sacramento, CA)

Data Links:

L-3 Communications (Salt Lake City, UT)

CHALS-C:

Lockheed Martin (Oswego, NY)

X-MIDAS Software:

ZETA (Fairfax, VA)

HBC Subsystem:

ArgonST Radix (Mountain View, CA)

