# **Guardrail Common Sensor (GR/CS)**

## INVESTMENT COMPONENT

Modernization

Recapitalization

Maintenance

## **MISSION**

To provide signal intelligence 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, signals intelligence (SIGINT) collection and precision targeting location system. It provides near-real-time information to tactical commanders in the corps/joint task force area with emphasis on deep battle and follow-on forces attack support. 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 eight to 12 RC-12 aircraft flying operational missions in sets of two or three. Up to three airborne relay facilities 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 highpriority 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

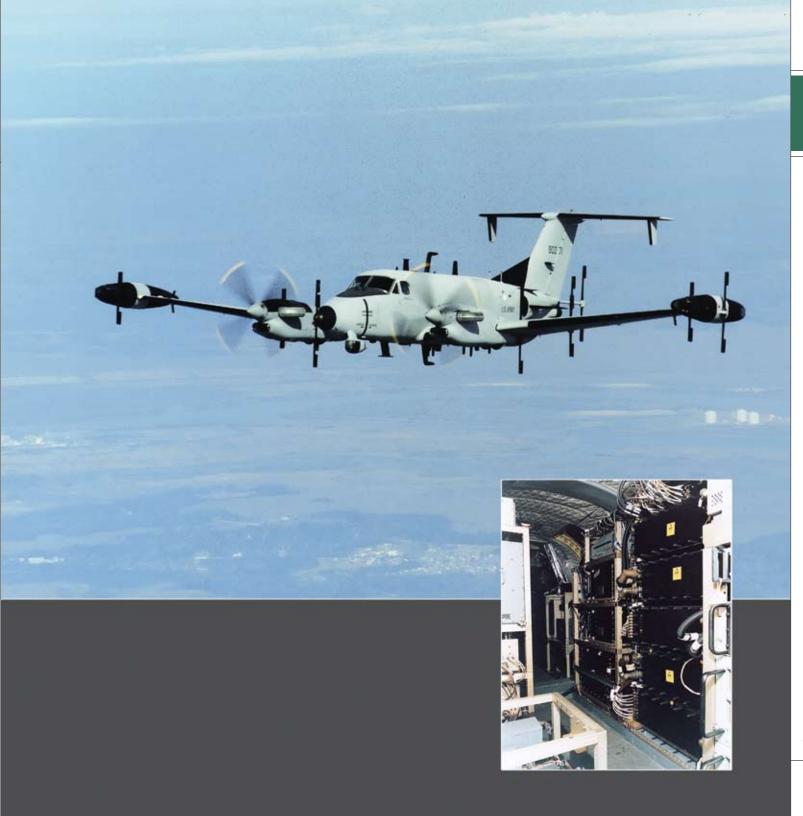
- **3QFY08:** Initial CHALS-C flight test
- 1QFY09: ESA factory acceptance test

#### PROJECTED ACTIVITIES

- **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

**ACQUISITION PHASE** 

echnology Development



# **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 (Owego, NY)

X-MIDAS software:

ZETA (Fairfax, VA)

# **HBC Subsystem:**

ArgonST Radix (Mountain View, CA)

