

CGI and Galileo



Providing secure, mission-critical expertise for Europe's navigation satellite system

Galileo is the European Union's (EU's) global navigation satellite system. Created through the European Space Agency (ESA) and designed for civilian use, Galileo provides highly accurate, guaranteed global positioning services that range from search and rescue to smartphone location features.

Initial services from Galileo went online in December 2016. Currently, the system consists of 28 satellites. As this constellation continues to grow, additional services and improvements are being tested and made available. Galileo navigation signals provide high-quality coverage as far north as Norway's North Cape and are able to deliver real-time positioning accuracy down to a single meter.

A trusted partner from the start

We have been involved in the planning, implementation and deployment of the Galileo system since 2003, when the EU and ESA approved the first stage of its development. In 2004, they named us the primary contractor for the project's ground segment.

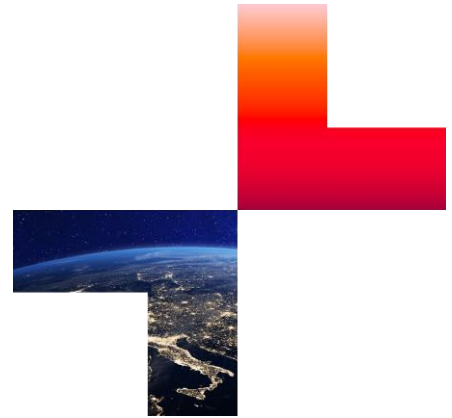
At present, we are the single largest supplier of end-to-end security systems for Galileo. This includes the satellite system's one-of-a-kind Public Regulated Service—which sends robust, resilient and encrypted signals exclusively for government-authorized users.

We also are developing the testing protocols for what will become G2G—Galileo Second Generation. Our end-to-end modeling tool is critical to the operation, which will improve the accuracy and durability of the navigation system.

For the EU Agency for the Space Programme for Galileo, we provide high-end consulting in areas including cybersecurity, accreditation support, system redesign optimization, service engineering, service validation and reporting, security operations support, and operator training. Additionally, we provide on-site support to the ESA for Galileo's system integration and verification.

Supporting key Galileo projects

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These include the following:

- **Galileo Security Chains Verification Test Bench:** As part of Galileo's ground control segment, we co-designed and operate the test bench used to verify and validate security functions for the system.
- **Galileo Control Segment:** Responsible for monitoring and control of the Galileo constellation, the newly upgraded control segment includes two control centers, in Germany and Italy, and a half-dozen tracking-and-control ground stations. We work on the development, integration, verification and maintenance of a number of elements at the control segment.
- **Galileo Mission Segment:** This segment is a processing chain in charge of data that is broadcast in satellite navigation messages. We are involved in elements including the Ground Assets Control Facility, the Galileo Network Management Facility and the Key Management Facility.
- **Galileo Second Generation (G2G):** Currently in the design phase, the satellite system's second generation will improve performance on a host of features. We are contributing to multiple upgrades in both the ground and space segments and are helping develop an end-to-end modeling tool.

Our work on Galileo is part of our mission to deliver operational satellite navigation systems and elements across a broad range of sectors. For EGNOS—Europe's satellite-based augmentation system that supplements GPS and will eventually supplement Galileo—we have developed ground infrastructure and control systems.

About CGI

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

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