

FACT SHEET

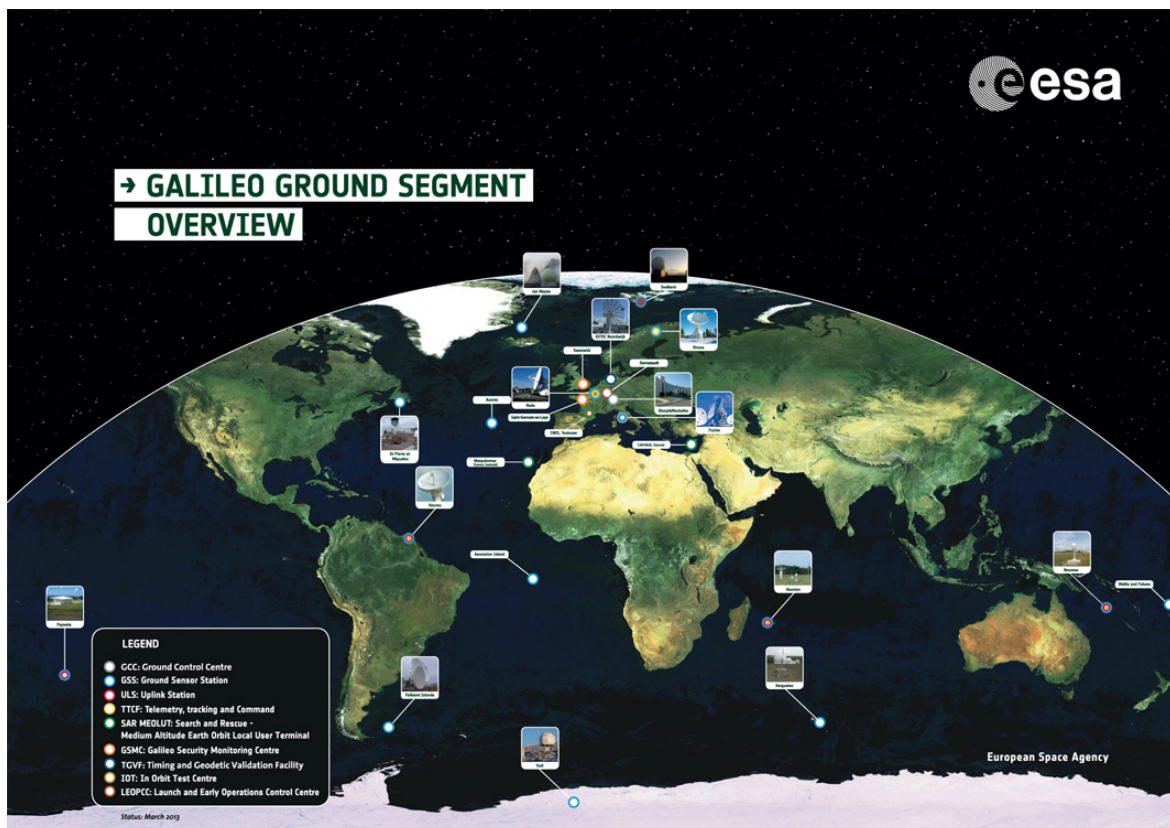
Galileo Status



Galileo is Europe's programme for a global navigation satellite system, providing a highly accurate, guaranteed global positioning service, interoperable with the US GPS and Russian Glonass systems. Galileo's modern and efficient design will increase Europe's technological independence, and help to set international standards for Global Navigation Satellite Systems (GNSS). Galileo is developed in collaboration between the European Union and the European Space Agency (ESA).

The complete Galileo constellation will consist of 24 satellites plus spares. With the satellites taking about 14 hours to orbit Earth at altitudes of 23 222 km, there will always be at least four satellites visible anywhere in the world. The satellites are being placed in three orbital planes at an angle of 56 degrees to the equator, which will provide coverage right up to the polar regions.

Galileo also depends on an extensive ground infrastructure, which will have to make sure that time and positioning data are extremely accurate – a single billionth of a second clock error means a positioning error up to a range of 30 cm. This ground infrastructure includes sensor stations worldwide, two control centres, Mission Uplink stations, and Telemetry, Tracking and Command (TT&C) stations (as shown below).



Two main phases of the programme

1. During the In-Orbit Validation (IOV) phase, the system was assessed through tests, the operation of two experimental satellites and a reduced constellation of four operational satellites and their ground infrastructure. The first four Galileo satellites were launched in pair, on 21 October 2011, and on 12 October 2012. This phase was successfully concluded at the end of 2013, showing good results.

2. The Full Operational Capability (FOC) phase consisting of the deployment of the remaining ground and space infrastructure is currently ongoing:

Satellites	Mission Name	Launch Dates		Satellite names
Sat. 14	Galileo Sat 13 & 14	24.05.2016	Soyuz from French Guiana	GSAT-211
Sat. 13				GSAT-210
Sat. 12	Galileo Sat 11 & 12	17.12.2015	Soyuz from French Guiana	GSAT-209
Sat. 11				GSAT-208
Sat. 10	Galileo Sat 9 & 10	11.09.2015	Soyuz from French Guiana	GSAT-206
Sat. 9				GSAT-205
Sat. 8	Galileo Sat 7 & 8	27.03.2015	Soyuz from French Guiana	GSAT-204
Sat. 7				GSAT-203
Sat. 6	Galileo Sat 5 & 6	22.08.2014	Soyuz from French Guiana	GSAT-202
Sat. 5				GSAT-201
Sat. 4	IOV-2	12.10.2012	Soyuz from French Guiana	GSAT-104
Sat. 3				GSAT-103
Sat. 2	IOV-1	21.10.2011	Soyuz from French Guiana	GSAT-102
Sat. 1				GSAT-101
GIOVE-B		27.04.2008	Soyuz from	retired
GIOVE-A		28.12.2005	Baikonour	retired

An adapted Ariane 5 ES 'Galileo' is planned to deploy four Galileo satellites at once during mid-November 2016.

Who is involved?

The Galileo programme is funded and owned by the EU. The European Commission has the overall responsibility for the programme, managing and overseeing the implementation of all programme activities.

Galileo's deployment, the design and development of the new generation of systems and the technical development of infrastructure are entrusted to ESA. The definition, development and in-orbit validation phases were carried out by ESA, and co-funded by ESA and the European Commission.

The Commission and ESA have signed a delegation agreement by which ESA acts as design and procurement agent on behalf of the Commission.

The European Global Navigation Satellite System Agency (GSA) is ensuring the uptake and security of Galileo. Galileo operations and provision of services will be entrusted to the GSA from 2017.

General information about the European Global Navigation Satellite Systems:

www.satellite-navigation.eu
http://www.esa.int/Our_Activities/Navigation
<http://ec.europa.eu/growth/sectors/space/galileo>

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