

Four Galileo satellites at ESA test centre

December 22 2014



The latest Galileo satellite, formally known as FOC FM06, arrived at the ESTEC Test Centre in its protective container on the afternoon of 18 December 2014, having travelled from OHB in Bremen, Germany. Credit: ESA–Anneke Le Floc'h

ESA engineers unwrapped a welcome Christmas present: the latest Galileo satellite. The navigation satellite will undergo a full checkout in Europe's largest satellite test facility to prove its readiness for space.

The satellite was carried by lorry from its manufacturer in Germany, cocooned within an environmentally controlled container.

It arrived inside the cleanroom environment of ESA's technical centre, ESTEC, in the Netherlands, last Thursday afternoon. The container was then opened up to begin preparations for testing.

The first six Galileo satellites are already up in orbit, launched in pairs in 2011, 2012 and August this year.

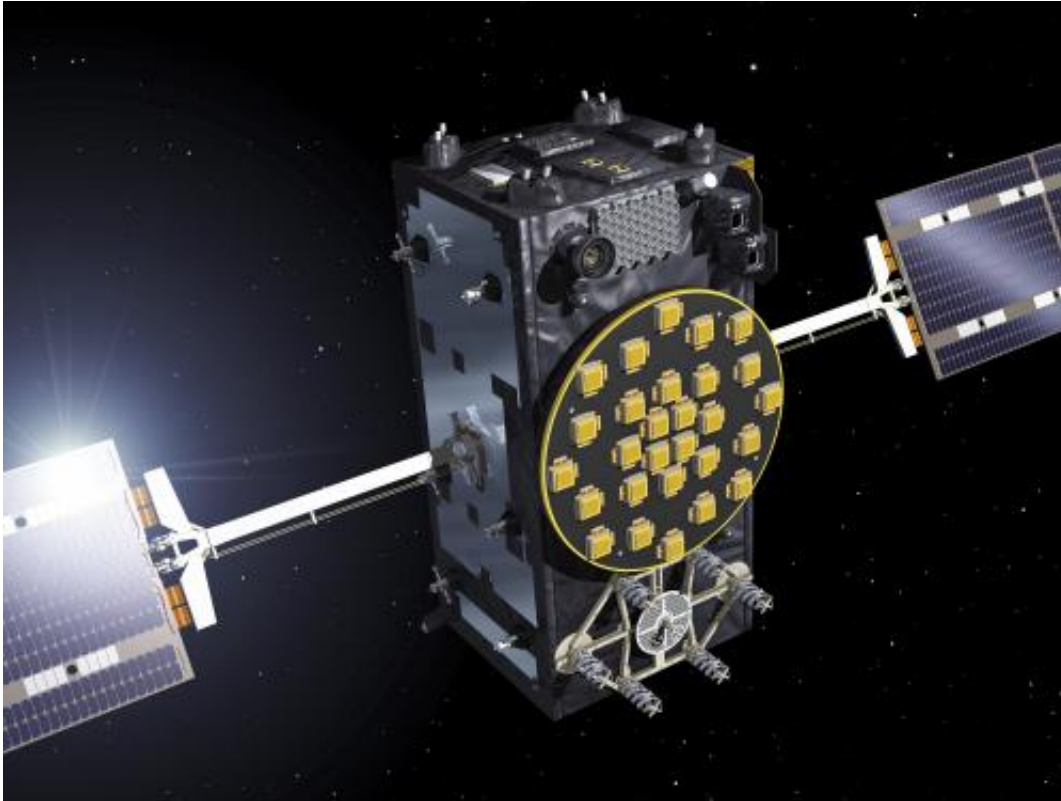
The last pair was delivered into the wrong orbit by a faulty upper stage, but the fifth satellite's orbit has since been changed to allow checking of its navigation payload, which began at the end of November.

Meanwhile, down on the ground, production of further satellites continues steadily, taking the Galileo series into double figures overall.

Following on from the first four In-Orbit Validation satellites, 22 of these Full Operational Capability satellites are being built by OHB in Bremen, Germany, with navigation payloads from SSTL in Guildford, UK.

Numbered Flight Model 6, or FM06 for short, this latest of the newer satellites is now reunited under the test centre's roof with three others.

FM03 and FM04 have completed their acceptance testing, culminating in the weeks-long 'thermalvacuum' test. Each satellite was subjected to the same vacuum and extreme temperature conditions experienced in orbit, as well as radio-frequency testing of their navigation payloads and antennas inside an anechoic chamber isolated from the external universe.



Artist's view of a Galileo Full Operational Capability satellite, with platforms manufactured by OHB in Bremen, Germany, and navigation payloads coming from Surrey Satellite Technology Ltd in Guildford, UK. The first two Galileo Full Operational Capability satellites (satellites 5-6) were launched together aboard a Soyuz rocket from Europe's Spaceport in French Guiana on 22 August 2014, joining the four Galileo satellites already in orbit. Some 22 FOC satellites are being manufactured. Credit: ESA–J. Huart, 2014

This pair is now in storage in the centre pending the results of their concluding acceptance review.

The other satellite, FM05, recently ended its own thermal–vacuum trial. It is now being reconfigured for radio-frequency testing, planned to take place after the Christmas break.

The latest unboxed Galileo [satellite](#) will undergo its own thermal–vacuum test in January.



The container containing the latest Galileo satellite, FOC FM06, being carefully hoisted off the lorry that has carried it from maker OHB in Bremen, Germany. Its underside was then carefully cleaned (the rest of the container having already been sprayed clean outside) before it was taken out of the bay into the cleanroom environment of the main ESTEC Test Centre. The satellite arrived on 18 December 2014. Credit: ESA–Anneke Le Floc'h

ESTEC is an essential stop on the way to space for Galileo. It is equipped with all the facilities needed to simulate space conditions under a single roof, including an acoustic chamber, earthquake-strength shaker tables, and anechoic and vacuum chambers, along with a range of specialised measuring equipment.

Once ESTEC gives the satellites its stamp of quality then they are in principle ready to be flown to Europe's Spaceport in Kourou, French Guiana. ESA and the European Commission are currently deciding on the launch schedule for these next Galileos.

Provided by European Space Agency

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