Galileo satellites fuelled for flight

May 11 2016

Europe's 13th Galileo satellite was fuelled with hydrazine on 5 May 2016 inside the S3B payload preparation facility of Europe's Spaceport in French Guiana. The 14th satellite was similarly fuelled the following day ahead of a shared launch by Soyuz from French Guiana on 24 May. Credit: ESA-CNES-Arianespace/Optique video du CSG – S Martin

Europe's latest Galileo satellites have been filled with fuel in preparation for their joint launch on a Soyuz rocket from Europe's Spaceport in French Guiana on 24 May.

Technicians donned spacesuit-like protective outfits to handle the toxic hydrazine fuel that will enable the two satellites to fine-tune their orbits and orientation over the course of their working lives of 12 years or more.

The 13th Galileo satellite was fuelled on 3 May, with the 14th being fuelled a day later.

After fuelling both satellites have been connected to 'checkout terminal equipment' to enable battery charging and atomic clock monitoring.

They are now ready for the next step in the launch preparations: attachment to the dispenser that will hold them during the ascent to orbit before release. The assembly will next be attached to the Fregat upper stage.

Placed atop the other three Soyuz stages, the reignitable Fregat – as much a spacecraft as a rocket stage – will carry the satellites the bulk of the way to their target 23 500 km altitude during a flight of almost four hours.

Steps so far

This latest Galileo campaign began when the cargo Boeing 747 carrying the pair touched down at French Guiana's Cayenne – Félix Eboué Airport on 5 April.

Cutaway view of the Soyuz rocket fairing carrying the Galileo-13 and -14 satellites, seen atop the Fregat upper stage that will fly them most of the way to their intended medium-altitude orbit. Credit: ESA–Pierre Carril, 2016

They were driven by lorry straight to the satellite preparation facility in the space centre, where they were unboxed from their protective

containers that same day.

Next, after they were checked to ensure they had sustained no damage during their travels, came their 'fit check', when they were mechanically and electrically linked to the dispenser.

The final loading of their onboard software was also performed, including an update of the latest and final parameters, followed by testing to confirm the good health of the satellites. They were then switched off, which is their configuration for launch.

Europe's 13th and 14th Galileo satellites undergoing a fit check with their dispenser in the S1A cleanroom facility in mid-April 2016. The satellites were mechanically and electrically linked to the dispenser ahead of fuelling, after

which they were linked for real ahead of their 24 May launch. Credit: ESA-CNES-Arianespace/Optique video du CSG – P Baudon

Following this launch, four more satellites will be launched by Galileo's first customised Ariane 5 later this year.

About Galileo

Galileo is Europe's civil global satellite navigation system. It will allow users worldwide to know their exact position in time and space with great precision and reliability. Once complete, the system will consist of 24 operational satellites and the ground infrastructure to enable the provision of positioning, navigation and timing services.


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

Provided by European Space Agency

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