

First Galileo Satellite Repositioned

Surrey Satellite Technology (SSTL), UK, has completed the repositioning of the first Galileo test satellite, GIOVE-A, to a higher orbit to make way for the operational satellites of Europe's satellite navigation constellation. From the GIOVE-A operational headquarters, the operating team executed a series of precisely planned manoeuvres during July and August that have repositioned the satellite 113km above the orbit that the 27 operational Galileo navigation satellites will occupy.

Since its launch in December 2005, GIOVE-A has achieved all of its mission objectives and remains in excellent condition well beyond its design life of two years. The test satellite has secured the Galileo frequency filings with the International Telecommunication Union (ITU), facilitated the experimental reception of navigation signals from Medium Earth Orbit (MEO) and collected data to characterise the MEO environment using two different radiation-monitoring instruments. The mission has also flight-proven the main technologies developed for Galileo such as the highly accurate atomic clocks.

GIOVE-A remains fully operational, and has sufficient propellant remaining for further manoeuvres. During transit to its new orbit, the Galileo navigation signal broadcasting was temporarily suspended because the precise orbit determination that is required to generate usable navigation data for the GNSS user community was not possible. There are two optimal windows during the year to perform repositioning manoeuvres. No further manoeuvres are planned in the current window, therefore the payload has been successfully switched on again and the spacecraft has now resumed broadcasting navigation signals from its new orbit.

A further repositioning exercise may be performed to raise the orbit higher still before GIOVE-A is finally de-commissioned.

GIOVE-A was developed and manufactured by SSTL within a 30-month, EUR28M contract. The company continues to operate the satellite from its Guildford, UK facilities and has also undertaken or contributed to the GIOVE-A and GIOVE-B testing programmes that are the foundations of the future Galileo satellite navigation system and the operational satellite development.

OHB and SSTL jointly form one of the two consortia now bidding for the development and construction of 28 satellites for the operational Galileo service. By allowing two consortia to build spacecraft for this important European undertaking, ESA and the EU would ensure that the full operational capability can be put in place as soon as possible and at best value to the taxpayer. The system is to be fully operational by 2013 following full contract signature expected in late 2009.