

Galileo satellite platform tests under way

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The Galileo in-orbit verification engineering model satellite platform, showing the power subsystem undergoing testing at Thales Alenia Space, Rome. Credits: ESA / Thales Alenia Space Italia

(PhysOrg.com) -- The engineering model of the first Galileo satellites has completed platform integration tests at the Thales Alenia Space facility in Rome. The platform is now undergoing functional testing. Delivery of the engineering model payload from Astrium UK is expected in December.

These tests are an important step towards building and launching the first four Galileo satellites. Integration testing verifies the interfaces between units or subsystems and the larger integrated system. Functional testing demonstrates that the integrated elements meet their design specifications.

The engineering model of the Galileo In-Orbit Verification (IOV) satellites is mitigating the design risks ahead of building the proto-flight model and the three flight model satellites. It is also being used to debug the testing procedure and to demonstrate the [satellite](#)'s compatibility with the Galileo ground system.

The engineering model represents the flight models in form, fit and function, but does not have the complete redundancy of its flight counterparts. As the individual units of the engineering model do not have to undergo the lengthy and expensive environmental test campaigns needed for the flight models, it can be built far in advance of them, at a fraction of the cost.

Four in-orbit verification satellites

The Galileo In-Orbit Validation (IOV) phase will validate the system design using a reduced constellation of four satellites - the minimum required to provide exact positioning and timing at the test locations - along with a small number of ground stations.

The proto-flight and three flight model satellites will also be integrated and tested at Thales Alenia Space in Rome. They will be carried into orbit in pairs by Soyuz ST-B / Fregat MT launchers from Europe's [Spaceport](#) in French Guiana. The first launch is scheduled for late 2010 and the second for early in 2011.

The proto-flight satellite is under construction and starting its integration tests, using flight hardware and software configurations. The on-ground verification programme for the proto-flight model is intended to qualify the satellite design.

The verification programme for the flight model satellites is shorter and simpler, because it only has to demonstrate the correctness and quality of

their construction.

The definition phase and the development and In-Orbit Validation phase of the Galileo programme were carried out by the European Space Agency (ESA) and co-funded by ESA and the European Community.

Provided by European Space Agency ([news](#) : [web](#))

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