

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
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RAPID DEVELOPMENT OF NAVIGATION PAYLOADS FOR GALILEO FULL OPERATIONAL
CAPABILITY

Abstract

After a long procurement cycle the contract(s) for the development of the “full operational capability” (FOC) Galileo satellites are now underway. Following the vital precursor work on the test bed satellite GIOVE-A, a core team of OHB-System and SSTL formed in 2007 with the aim of offering satellites into the full operational system. It was announced by the European Commission that this team will be awarded a contract for 14 satellites in January 2010.

This paper describes SSTL's approach to the design, development and production of the navigation payloads for which SSTL is responsible under the contract. The design of the satellite is based around the concept of a modular structure with four platform modules and three payload modules. The modules can be individually manufactured and tested prior to overall satellite integration in Bremen.

The payload modules consist of (a) the Antenna module containing the mission receiver (MISREC), L-, S-, C- and UHF- band antennas plus the laser retroreflector, (b) the Clock module containing the PHMs and RAFS together with the clock control and monitoring unit (CMCU) and (c) the Payload core module containing the other units making up the payload including the amplification equipment, the frequency generation upconversion unit (FGUU), the navigation signal generation unit (NSGU), the Search and Rescue Transponder (SART), and an SSTL-developed remote terminal unit (RTU) acting as the main data interface to the bus as well as monitoring and controlling the payload units.