

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Space-Based Navigation Systems and Services (2)

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GALILEO FOC – DESIGN, PRODUCTION, OPERATIONS CONCEPT, AND PROJECT STATUS

Abstract

The European Commission has tasked OHB System with the design, production, and verification of the Galileo FOC ("Full Operational Capability") satellite constellation. The goal of the program is to develop and deploy an independent European satellite navigation system. The European Space Agency serves as the procurement agency on behalf of the EC.

Project kick-off for Galileo FOC space segment contract was in January 2010 for Work Order 1 (14 satellites) and January 2012 for Work Order 2 (8 satellites). The first launches in pairs on Soyuz from Kourou spaceport are foreseen for this year.

This paper will focus on design, production and the operations concept of Galileo.

- The design is based on a high degree of modularity, allowing high levels of parallelization of activities in early stages of assembly, as well as easy and fast access to the satellite's interior even at late stages of the project. The FOC satellite design features a couple of key differences to the design of the Galileo IOV (In Orbit Verification) satellites.
- The manufacturing, assembly, integration, and testing approach is based on a production island philosophy, which allows for a production cadence of one satellite every 6 weeks through series production.
- The operational concept has been optimized for an average orbit contact of 60 minutes. Flight control procedures for platform, payload and security have been developed, tested and delivered to the operations segment, together with the appropriate on-board software and database version. The paper will look into the details of the complex iteration cycles within several segments to produce final approved-by-all procedures for LEOP and routine phases.

Lastly, the paper will give an overview over the current project status (and highlights of the first launch and early operation activities).