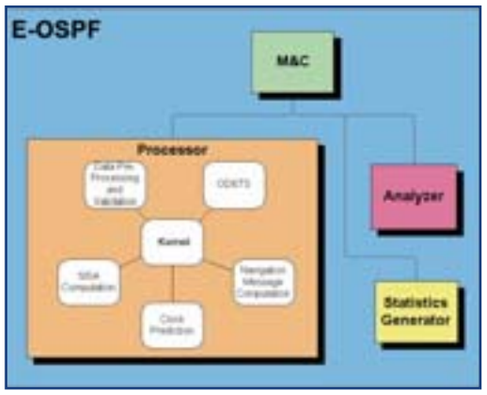
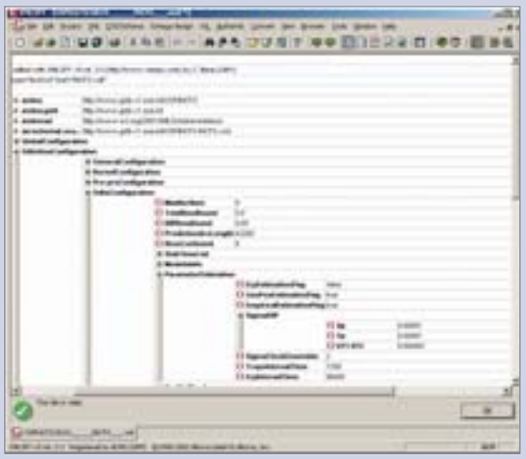
Galileo System Test Bed V1 Experimental Orbitography and Synchronisation Processing Facility (E-OSPF)

The E-OSPF is the element responsible for the generation of the Navigation and Signal In Space Accuracy (SISA) products within the GSTB-V1. It implements highly sophisticated prototype algorithms for the Galileo Orbit Determination and Time Synchronisation (OD&TS) function, aiming at the computation of accurate and reliable orbit and clock predictions.
The E-OSPF supports the automated execution of multiple processing sessions from a remote monitoring and control server as well as stand-alone execution of experimental processing sessions.
The E-OSPF has been developed using stringent software standards, ensuring a high product quality and the accomplishment of the required performances.



E-OSPF Characteristics:

- State-of-the-art OD&TS algorithms, not only featuring a GPS consolidated baseline but also including alternative experimentation strategies
- High algorithm configurability, supporting a wide range of experimentattion including tuning of the different models
- Modular software design in support of the evolution of the current algorithms or the integration of new ones (such as the processing of Galileo simulated measurements)
- Data and product interfaces based on standards (RINEX, SP3) and XML file formats



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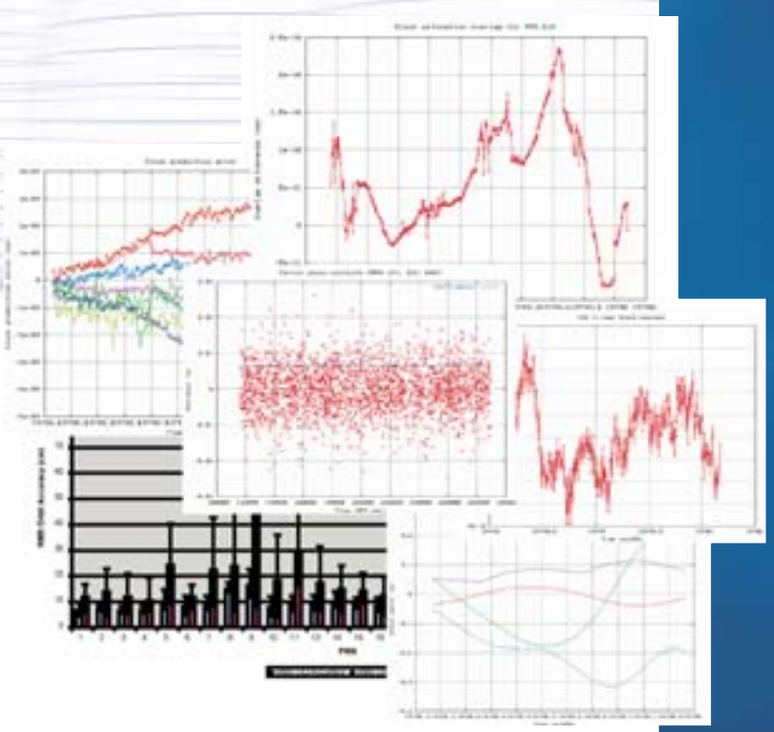
The E-OSPF is the platform that hosts the algorithms for Orbit Determination & Time Synchronisation (OD&TS) and Signal In Space Accuracy (SISA) in support of experimentation based on extensive processing of real GPS measurements. It supports the following analysis:

- Assessment of the performances of the OD&TS function (accuracy of orbit, clock and navigation message products), in view of the demanding target accuracy for the Galileo broadcast ephemerides and clocks
- Assessment of alternative algorithms (type of observables, clock estimation strategy, etc)
- Robustness against feared events (outages, manoeuvres, etc)
- Assessment of the candidate SISA algorithms and their performances from the integrity and availability points of view.



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Coming soon:

The E-OSPF is currently operational and running at the GSTB-V1 Processing Centre located at ESA ESTEC.
An upgrade of the E-OSPF is foreseen to allow to evolve from the processing of GPS measurements to Galileo simulated and first experimental satellite measurement data.

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