

Performance results of the Galileo Precise Timing Facility

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The Precise Timing Facility (PTF) is considered as a key element of the Ground Mission Segment (GMS) in the Galileo Global Navigation Satellite System (GNSS). The PTF major purpose is to generate the physical time scale of Galileo, the Galileo System Time (GST) with two main functions: the provision of a very stable time reference for navigation purposes and the metrological timekeeping. The first one is critical for fulfilling the navigation mission and is needed for the accurate computation of the orbit and satellite clock information included in the Galileo Navigation Message. The second function is aimed at steering GST towards International Atomic Time (TAI) and to provide the UTC timing dissemination service to the user. Navigation timekeeping is the core task of the PTF, whereas the metrological timekeeping is performed by an external Time Service Provider (TSP).

In addition to the above, PTF is also in charge of computing the Galileo-GPS Time Offset (GGTO) which allows the combined use of signals from both GNSS.

The PTF located in Italy is operated in nominal way since February 2013 while the German PTF will be qualified this year. This paper gives an overview of the Galileo Project progress and reports the first performance results of the PTF in Fucino (Italy) after the initial In-Orbit Validation (IOV) phase.