

GAL4TSync

Key facts

Full name

Galileo timing receiver for critical infrastructure synchronization

Project call number

EUSPA/GRANT/02/2024-03

Project call

Galileo Timing receivers implementing CEN/CENELEC standards

EU contribution

€ 862,163.16

Market segment

Critical Infrastructure

Project start/end

01/09/2025 – 31/08/2027

Context and motivation

GNSS Timing, and Galileo timing in particular, is essential for critical infrastructures such as 4G/5G mobile networks, banking systems, and power grids, which require high accuracy time and frequency stability over wide areas. Tight synchronisation of distributed nodes is crucial, and requirements will become even more demanding with increasing transmission speeds and spectral efficiency in 5G networks. Therefore, promoting Galileo as a primary timing source is crucial, supported by a clear value proposition based on accuracy and trust. To this end, a dedicated Galileo Timing Service has been

defined within the Galileo Second Generation mission.

The Galileo Timing Service concept includes the use of standardized receivers as a key element. CEN/CENELEC EN 16605:2024 standard published on 04/12/2024 defines a baseline for such receiver. It considers the specificities of the Galileo Timing Service to ensure the end-to-end performance – accuracy, trust and resilience – for those users who make use of a receiver developed according to the Standard.



Challenge & technical solution

Develop a new hardware and software module enabling the reception of Galileo signals on the E1+E5a bands, as well as GPS L1 and L5, supporting Service Level 2 of the Galileo Timing Service.

The development will be carried out with respect to the specific application and market constraints in order to achieve adequate product maturity (TRL 7) in the shape of close-to-market prototypes ready to be fully validated and demonstrated in an operational scenario.

Scope

The main objective of the Gal4TSync project is to develop a commercially viable Galileo Timing Receiver compliant with the emerging standard EN 16605:2024. The receiver is intended to meet the demand of critical infrastructure networks as a primary timing source. Compliance with the standard ensures readiness for future user requirements, including increased resilience to radio interference, authentication, higher accuracy, and improved integrity monitoring. The project also supports user awareness and promotes the Galileo navigation system and the evolution of its timing services, with all project activities closely aligned with the Standard.

Targeted GNSS innovation

Commercially justified Galileo timing receiver supporting EN 16605:2024 standard

