

Linking space to user needs

Galileo

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Galileo Overview

- **Galileo** is the European Union Global Navigation Satellite System (GNSS), providing standalone navigation, positioning and timing information (PNT) to users worldwide, under civilian control
- **Galileo** provides **Europe** and European citizens with **independence and sovereignty in PNT services**



Galileo Control Centre
(Fucino, IT)



Galileo Control Centre
(Oberpfaffenhofen, DE)



GSMC
(Saint-Germain-en-Laye, FR)



GSMC
St Martin de la Vega, ES)



Galileo Reference Centre
(Noordwijk, NL)



GNSS Service Center
(Torrejon, ES)



Galileo services

- Galileo offers several **high-performance services worldwide**, featuring various levels of accuracy, robustness, authentication and security
- Galileo Services are provided to worldwide users **since December 2016**



Open Service (OS)	Freely, worldwide accessible service for positioning and timing
Public Regulated Service (PRS)	Encrypted Governmental service designed for higher robustness and availability
Search and Rescue Service (SAR)	Locates people in distress and acknowledges that the reception of distress signal
High Accuracy Service (HAS)	Delivers high accuracy services, freely accessible
OS Navigation Message Authentication (OSNMA)	<i>Testing phase</i>
Emergency Warning Satellite Service (EWSS)	<i>Testing phase</i>

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More than **4 billion Galileo enabled devices** worldwide.

OS is the key component of mass-market applications but also **security-critical** applications, such as health services, emergency services, and law enforcement.

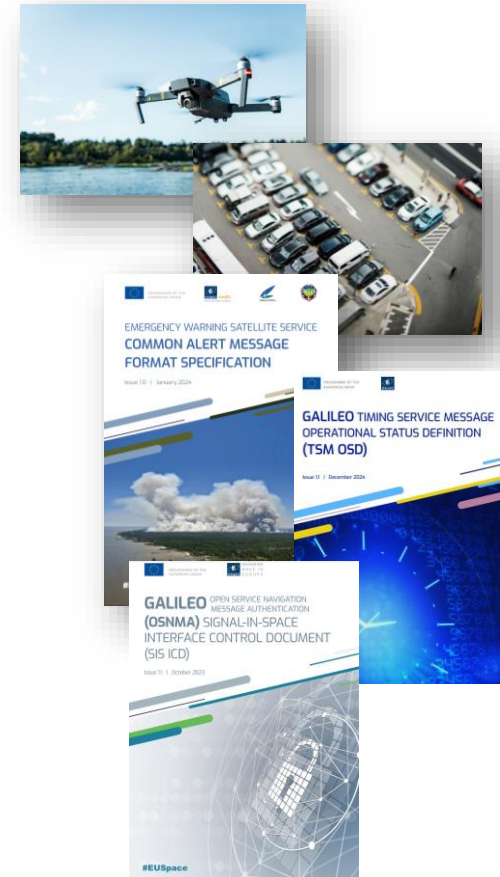
Public Regulated Service (PRS) is the service restricted to **government-authorised** users of sensitive applications, which require a high level of service continuity.

SAR/Galileo service is Europe's contribution to an international satellite-based **search and rescue** distress alert detection system.

Galileo Services in 5 years

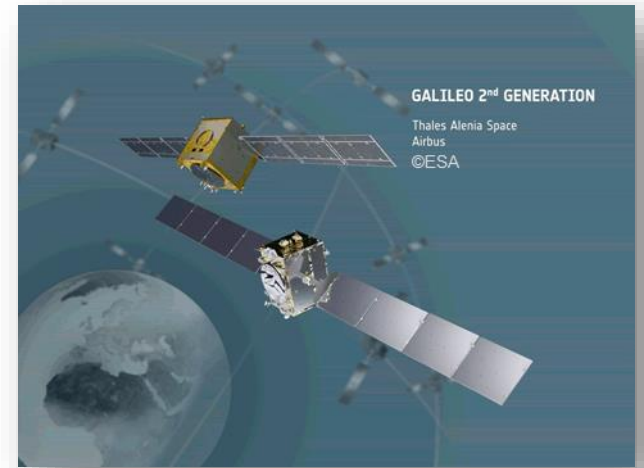
- Galileo service portfolio evolves to satisfy the needs of Europe and European citizens
- Existing services are improved, and new services are designed, while moving towards the new generation of Galileo infrastructure to strengthen Galileo posture worldwide
- Early capabilities for future further services will be also tested

<u>Service</u>	<u>Situation in 5 years time</u>
Public Regulated Service (PRS)	→ Full Service (FOC)
Open Service (OS)	→ Full Service (FOC)
High Accuracy Service (HAS)	→ Full Service
SAR Forward and Return Link	→ Full Service
OS Navigation Message Authentication (OSNMA)	→ Enhanced Service
Signal Authentication Service (SAS)	→ Initial Service
Timing service	→ Initial Service
Galileo ARAIM	→ Initial Service
Emergency Warning Satellite Service (EWSS)	→ Readiness for Initial Services
SAR Remote Beacon Activation	→ Full Service



Galileo System in 5 years

- The Galileo infrastructure will evolve with the arrival of the **second generation of Galileo satellites**.
- With a gradual introduction of cutting-edge new generation satellites in the current fleet, several important innovations will be made available to Galileo users:
 - **new payloads** enabling the diversification of navigation services, thus enlarging the Galileo portfolio
 - **strengthen the robustness** of the satellite navigation services, by including frequency diversity, increased power levels, various levels of authentication
 - **increased accuracy** in time and position, relying on new a generation of atomic clocks and an innovative on-board time generation approach

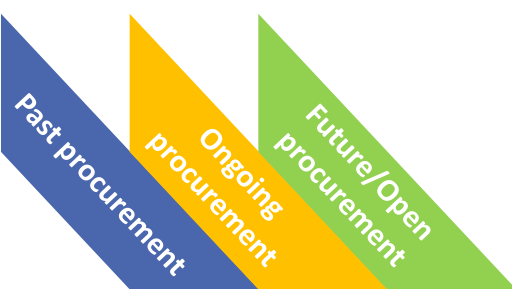


Galileo Programme Procurements Rules

- According to the current Regulation, **EUSPA is the System Prime of the System in Operation**
- **EUSPA is in charge of the procurements for the deployment and maintenance activities** of the current Ground Segment (GCS/GMS/GSF) for which EUSPA procures and implements in its own name, according to EU procurement rules
- For activities related to major **system evolution (Space and Ground segment)**, **ESA implements contracts**, acting in the name and on behalf of EUSPA
- Concerning **Launch Services**:
 - Until Galileo **Launch 14**, **ESA is in charge** of the procurement of Launch Services **in the name and on behalf of the European Commission**.
 - As of Galileo **Launch 15**, **EUSPA is in charge** of the procurement of Launch Services.

Procurements supporting Galileo

- The procurements launched by EUSPA to support the Galileo-related activities can be grouped in 4 sets:
 - Galileo Service Operations
 - Infrastructure procurement, deployment and maintenance
 - Tools for service provision and user segment
 - Support services for EUSPA



Galileo Service Operations

- GSA/CD/14/14 - Galileo Service Operator (GSOp)
 - **The FWC contract covers the operations and maintenance of the Galileo Ground and Space System and its committed performance level: in particular, the operations and control of the system, the logistics and maintenance of the systems and infrastructure as well as the user support services.**
 - Type of procurement: Competitive dialogue
 - Type of contract: Framework Contract signed in December 2016
 - Special conditions :
 - Participation conditions in accordance with Article 18 of GNSS Regulation limiting to economic operators established in European Union Member States
 - PRS decision applicable, authorization to access PRS information needed from Security Accreditation Board of the EU GNSS systems (SAB) and their national Competent PRS Authority (CPA)
 - Subcontracting minimum share 35%, with a 15% minimum share of subcontracting outside of the tenderer's group
 - FWC ceiling: 1,500 M€

Galileo Service Operations

- EUSPA/CP/09/24 – Galileo Service Operator II (GSOp II)
 - Type of procurement: Competitive procedure with negotiation
 - Type of contract: Framework Contract
 - Special conditions :
 - Participation conditions in accordance with Article 24 of Regulation (EU) 2021/696
 - PRS decision applicable
 - Minimum 30% share of sub-contracting to be awarded in competitive tendering
 - Participation of Small and Medium Size Enterprises (SMEs) encouraged
 - FWC ceiling: 2,600 M€
 - Further information:
 - [PIN](#)
 - Invitation to Participate: [EU Funding and Tenders Portal](#) and [EUSPA website](#)
 - Dedicated industry event held on 03/02/2025 ([GSOp II - Industry Event Presentation](#))



PIN



Invitation



Presentation

Infrastructure procurement, deployment and maintenance (example)

- Typical example of recent procurements related with this category are:
 - Framework Contract (FWC) for **EGNSS Service Centre** (EUSPA/CD/24/21)
 - FWC for – Classified Information and Communication Systems for the GSA (**GRON v2**) (GSA-RP-27-19)
 - FWC for **Galileo Reference Centre (GRC)** Infrastructure Evolution, Nominal Operations Support, and Maintenance (EUSPA/CD/14/21)
 - FWC for the **European GNSS Service Demonstrator** (ESD)
 - FWC for the **EmeRgency Alerting System** (ERAS) (EUSPA/OP/12/23)

Infrastructure procurement, deployment and maintenance (example 1)

- **EUSPA/CD/24/21 – Evolution of the European GNSS Service Centre (E-GSC) Infrastructure**

- Provision of a turnkey service for the design, development, qualification, validation and commissioning of the evolutions of the E-GSC infrastructure
- FWC, signed in July 2024
- During the execution of the contract, the contractor shall achieve a 30% share of subcontracting in competitive tendering.
- FWC ceiling: 35M€
- [Further information](#)



Infrastructure procurement, deployment and maintenance (example 2)

- **GSA/RP/27/19 – Classified Information and Communication Systems for**
- **the GSA (Galileo Robust Operational Network v2)**
 - The scope of work of the FWC is the design, deployment, test and validation, support to accreditation, training, exploitation and maintenance of the GRON v2, Galileo operational network between GSMCs, EEAS and Member States. The scope includes several chains (Integration, Validation and Operational environment) with 2 different classification levels
 - FWC signed in September 2021
 - Participation conditions in accordance with Article 18 of GNSS Regulation limiting to economic operators established in European Union Member States
 - FWC ceiling : 66M€
 - [Further information](#)



Infrastructure procurement, deployment and maintenance (example 3)

- **EUSPA/CD/14/21 – GRC Infrastructure Evolution, Nominal Operations Support, and Maintenance**
 - Provision of services for development and evolution of the Galileo Reference Center (GRC), the nominal operations support to the GRC, and the maintenance of the GRC release in operation.
 - FWC, start January 2025
 - During the execution of the contract, the contractor shall achieve a 30% share of subcontracting in competitive tendering.
 - FWC ceiling: 27.5M€
 - [Further information](#)



Infrastructure procurement, deployment and maintenance (example 4)

- **European GNSS Service Demonstrator (ESD)**

- The aim of the contract is to develop the European GNSS Service Demonstrator (ESD) providing a centralised platform for the demonstration of new and enhanced end-to-end European Global Navigation Satellite System (EGNSS) services.
- Procurement of supplies
- FWC ceiling: 10M€
- [Prior information notice \(PIN\)](#)



Infrastructure procurement, deployment and maintenance (example 5)

• EmeRgency Alerting System (ERAS)

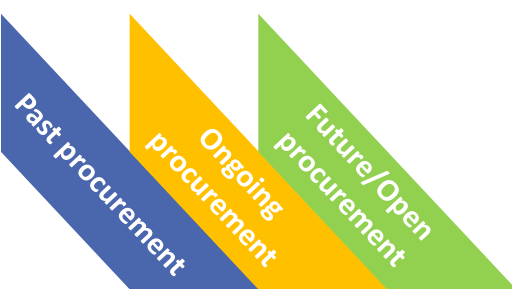
- Development, deployment and support to entry to operations of a new Galileo infrastructure involved for the subsequent delivery of the Galileo Emergency Warning Satellite Service (EWSS), SAR Remote Beacon Activation (RBA) and SAR Two-Way Communications (TWC).
- Framework Contract, signed in October 2024, with up to 4 Specific Contracts
- Conditions in accordance with Article 24 of the Space Regulation, recommended 30% share of subcontracting (min. 15%)

- FWC ceiling: 7 M€
- [Further information](#)



Tools for service provision and user segment

- **Public Regulated Service Radio Frequency Constellation Simulator (GSA/NP/22/19)**
- **Key Transfer Devices** between **Public Regulated Service Security Module (PRS SM)** and Network Technologies dedicated for PRS (GSA/NP/23/19)
- **Public Regulated Service Messages'** (Navigation and Security Message) **Generator for Simulation Purposes** (GSA/NP/24/19)
- **Public Regulated Service Signal-in-Space Monitoring Tool** (EUSPA/NP/07/23)
- Other recent activities related with this category are the various grants for the development of user segment (**receivers, antennas, enabling users' technologies**) targeting specific services/users, e.g. (please, refer to the presentation by Market, Downstream and Innovation)
- **Machine Learning for Improved EGNOS and Galileo Operations and Service Provision** (EUSPA/OP/27/22) (please, refer to EGNOS presentation)



Tools for service provision and user segment (Example 2)

- GSA/NP/22/19 – Public Regulated Service Radio Frequency Constellation Simulator (PRS RFCS)
 - **The general aim of this procurement is to establish a contract for the design, development, testing, demonstration, supply, maintenance as well as training on use and functionalities of 1 Public Regulated Service (PRS) radio frequency constellation simulator.**
 - Type of procurement: Negotiated Procedure
 - Type of contract: Supplies Contract, start September 2023
 - Special conditions :
 - Participation conditions in accordance with Article 18 of GNSS Regulation limiting to economic operators established in European Union Member States
 - The economic operator must have obtained the relevant authorization of the Security Accreditation Board (“SAB”) established in accordance with Article 11 of Regulation (EU) No 912/2010
 - In accordance with Article 26(1) of the GNSS Regulation the contractor must subcontract, outside of the tenderer’s group, an indicative minimum share of 10 % by means of competitive tendering
 - FWC ceiling: 6 M€
 - [Further information](#)



Tools for service provision and user segment (Example 3)

- GSA/NP/23/19 – Key Transfer Devices between Public Regulated Service Security Module (PRS SM) and Network Technologies dedicated for PRS (PRS-KTD)
 - **The aim of this procurement procedure is to pursue multiple by concluding two contracts, each contract having as scope the design, development, supply and maintenance of 20 key transfer devices between Public Regulated Service Security Module (PRS SM) and network technologies dedicated for PRS.**
 - Type of procurement: Negotiated Procedure
 - Type of contract: Supplies Contract, start December 2022
 - Special conditions :
 - Participation conditions in accordance with Article 18 of GNSS Regulation limiting to economic operators established in European Union Member States
 - An economic operator in charge of PRS-related activities shall be authorised by the Security Accreditation Board (SAB)
 - In accordance with Article 26(1) of the GNSS Regulation the contractor must subcontract, outside of the tenderer's group, an indicative minimum share of 10 % by means of competitive tendering
 - FWC ceiling: 5.89 M€
 - [Further information](#)



Past procurement

Tools for service provision and user segment (Example 4)

- GSA/NP/24/19 – Public Regulated Service Messages' (Navigation and Security Message) Generator for Simulation Purposes (TVG)
 - **The general aim of this procurement is to establish a direct contract for the design, development, testing, demonstration, supply, maintenance as well as training on use and functionalities of a PRS messages' generator for simulation purposes. Such a tool, hardware and software, has to be able to generate test vectors for the Galileo Public Regulated Service (PRS) that can be used to test other equipment**
 - Type of procurement: Negotiated Procedure
 - Type of contract: Supplies Contract, start December 2021
 - Special conditions:
 - Participation conditions in accordance with Article 18 of GNSS Regulation limiting to economic operators established in European Union Member States
 - An economic operator in charge of PRS-related activities shall be authorised by the Security Accreditation Board (SAB)
 - In accordance with Article 26(1) of the GNSS Regulation the contractor must subcontract, outside of the tenderer's group, an indicative minimum share of 10 % by means of competitive tendering.
 - FWC ceiling: 3 M€
 - [Further information](#)



Tools for service provision and user segment (Example 1)

- EUSPA/NP/07/23 – Public Regulated Service (PRS) Signal-in-Space Monitoring Tool (PRIMO)
 - **The scope of this tender procedure is aimed at designing, developing, testing, supplying and maintaining 2 PRS SIS Monitoring (PRIMO) tools.**
 - Type of procurement: Negotiated Procedure
 - Type of contract: Supplies Contract
 - Special conditions :
 - Participation conditions in accordance Article 24 of Regulation (EU) 2021/696, in order to protect the essential security interest of the Union and its Member States
 - The economic operator must have obtained the relevant authorization of the Security Accreditation Board established in accordance with Article 11 of Regulation (EU) No 912/2010
 - In accordance with Article 17(1) of the Space Regulation, A 10% minimum share of subcontracting outside of the tenderer's group
 - FWC ceiling: 7 M€
 - [Further information](#)



Support services for Galileo

- Typical example of recent procurements related with this category is:
- **Engineering Support to SBAS Standardisation Activities (ENTICE)**
- The scope of the procurement is to provide **technical support** through engineering studies associated to **GNSS standardisation activities in various market segments** (e.g. civil aviation, rail, maritime, automotive, drones and timing and synchronisation applications). These studies will aim to support EUSPA within standardisation fora to **develop new GNSS standards and evolve existing ones**, also performing impact/compliance assessment of EGNOS and Galileo systems in relation to the aforementioned standards.
 - Service procurement, start in October 2024
 - Special conditions (minimum 15% share of subcontracting to be awarded in competitive tendering)
 - FWC ceiling: 5M€
 - [Further information](#)



Past procurement

Q&A Session

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