

EGNOS



EUSPA Industry Days 2026

Ester ARMENGOU-MIRET, EGNOS Service Operations Manager

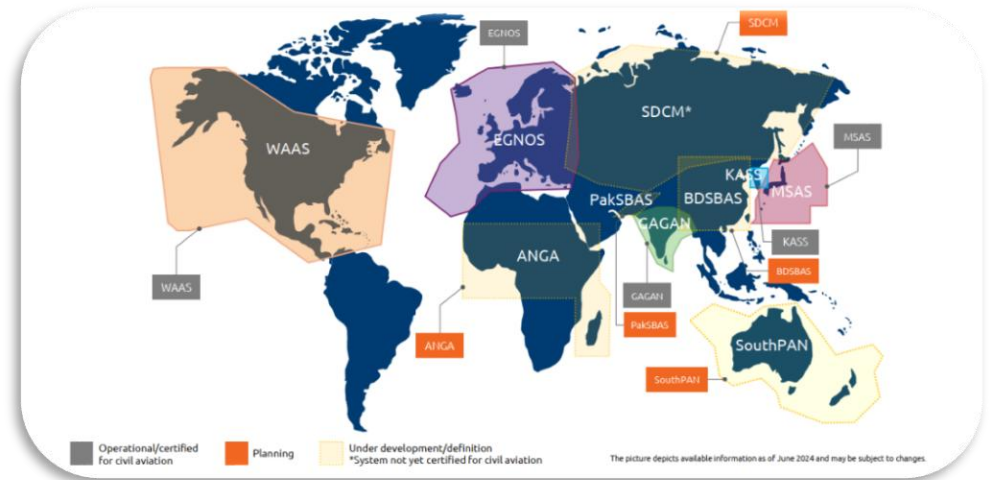
Michel HAMWI, EGNOS Service Provision Manager





What is EGNOS?

- European **G**eostationary **N**avigation **O**verlay **S**ervice
- Regional Satellite-Based Augmentation System
- Provide services augmenting the GPS signals over Europe:
 - Better performance: **accuracy, integrity**, availability, continuity
 - Certified for use in **Safety-Of-Life applications**
- Inter-operable with other regional systems



- EGNOS V3 under development will augment also Galileo in L1 & L5

EGNOS Services Current Portfolio

Services delivered for the benefit of **EU and some non-EU countries** having an agreement with EC.



Open Service (**OS**)

- Available since October 2009
- Improves accuracy of GPS (GALILEO in the future)
- Ideal for mass-market receivers (personal navigation, tracking of goods, precision farming,...)



EGNOS Data Access Service (**EDAS**)

- Available since March 2012
- EGNOS data dissemination and added value services (DGNSS, RTK, etc.) through internet for registered users
- For Location based services (LBS), Assisted-GNSS (A-GNSS) concepts, R&D activities.



Safety of Life (**SoLA**) for Aviation

- Available since March 2011
- Integrity data provided through EGNOS signal in space for civil aviation users
- Enabling precision approaches down to 200 feet (LPV200)
- Compliant with International ICAO standards and recommended practices



SoL for Maritime Users (**ESMAS**)

- Available since March 2024
- Improves accuracy and provides system/satellites/ionosphere alarms within seconds
- Enabling maritime navigation for SOL At Sea (SOLAS) in harbour entrances, harbour approaches and coastal waters in line with IMO Resolution A.1046

ALL EGNOS SERVICES ARE FREE OF CHARGE

Details in Service Definition Documents here <https://egnos.gsc-europa.eu/documents>

Who are the EGNOS Users?

- More than **1000 EGNOS-based approaches** in more than **550 airports in 33 European countries.**
- Avionics solutions available for 370 aircraft models on the market.
- More than 140 operators.
- Future: urban air mobility



AVIATION



**MARITIME
IN-LAND
WATERWAYS**

- Retransmission of SBAS corrections through IALA beacons in 6 European countries
- EGNOS integration in Maritime and IWW receivers reaches 100% for SOLAS, 92% for PPU's and 89% for non-SOLAS
- ESMAS MSI processed by all IHO Navarea coordinators and vessels in the service area



AGRICULTURE

Around 85% of tractors in Europe using GNSS are equipped with EGNOS for precision farming



**SURVEYING
& MAPPING**

More than 90% of new GNSS devices in surveying and mapping are EGNOS enabled



ROAD

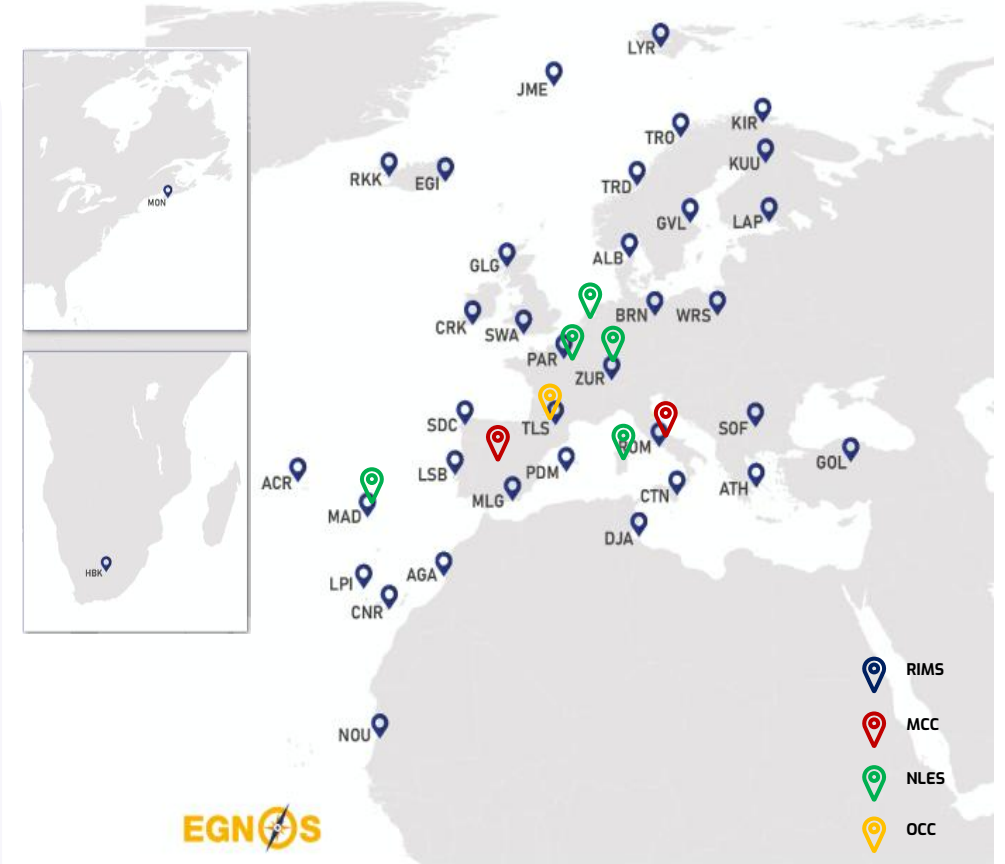
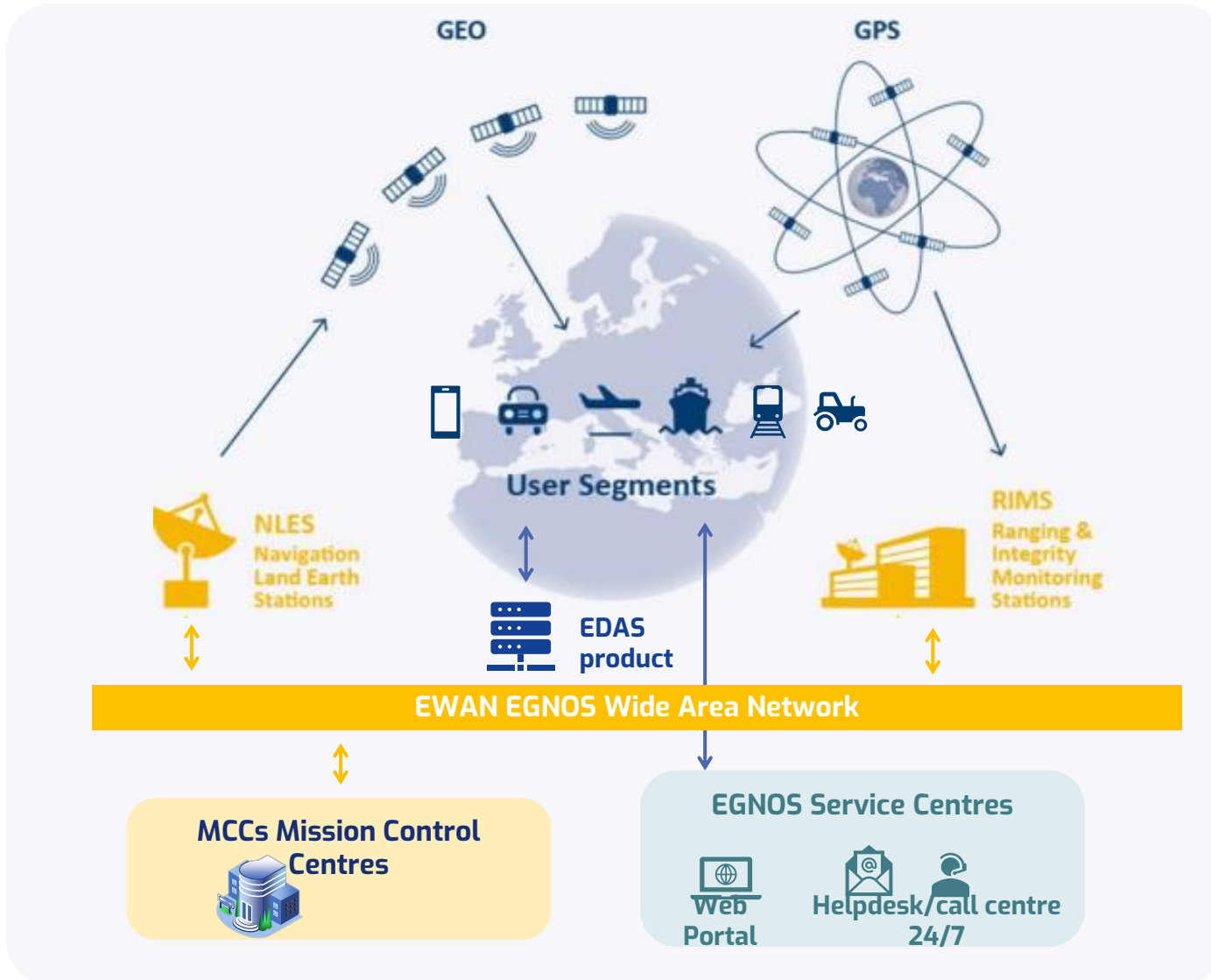
- 72% of EU tolled roads use GNSS
- Regulated applications for which EGNOS (and Galileo) is mandated: eCall, Smart Tachograph, free-flow tolling. Millions of vehicles....
- Future: connected and autonomous cars



RAIL

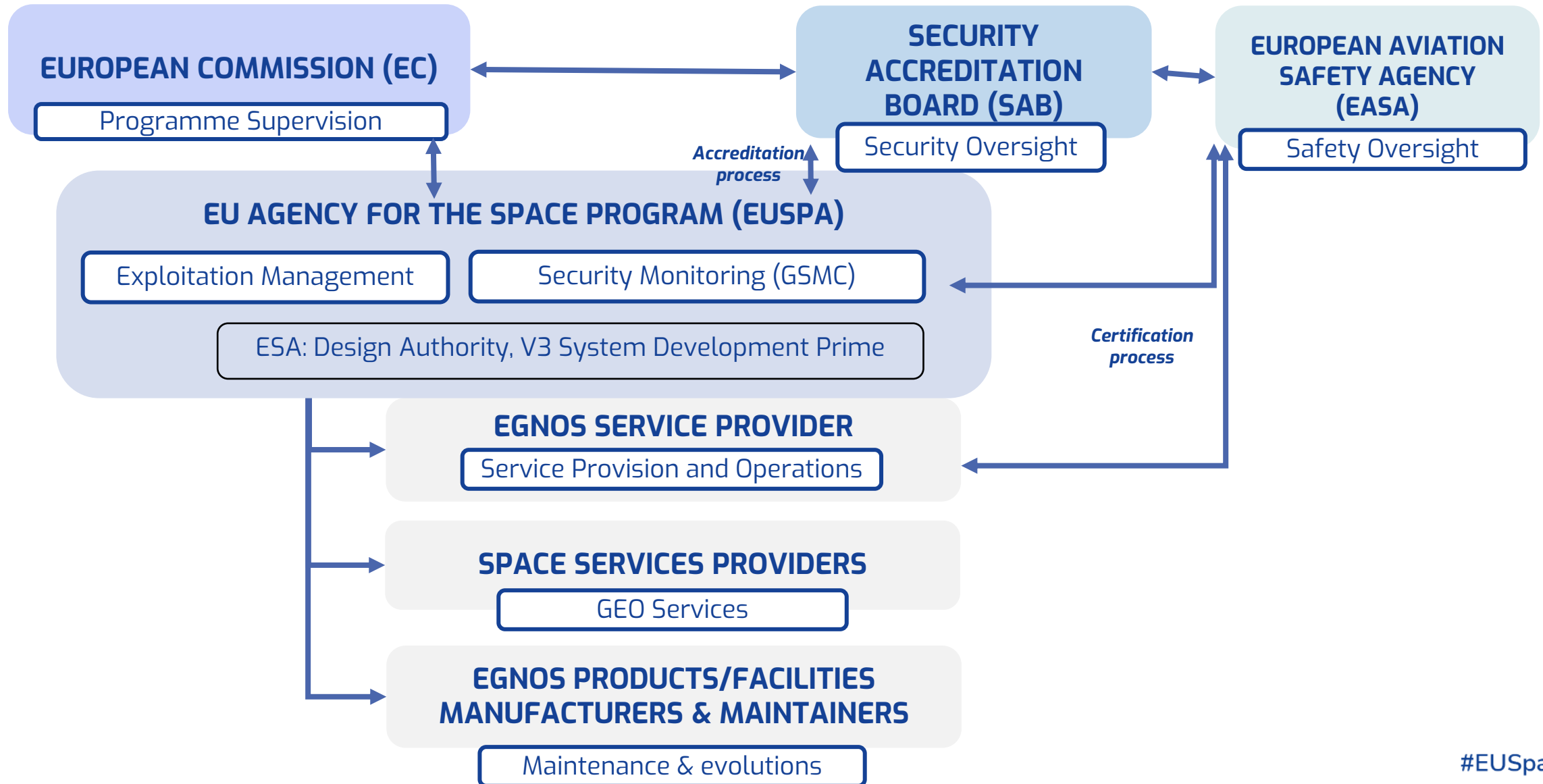
- 34% of European freight wagons tracked by EGNOS
- Around 5000 trains equipped with EGNSS PIS devices

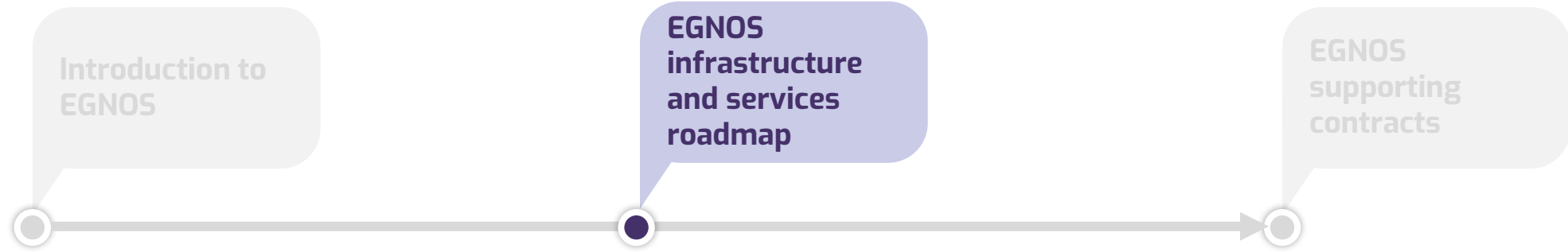
EGNOS Architecture



GEO Name	Orbital Slot	NLES
ASTRA-5B	23.5 E	Betzdorf (LUX) and Redu (BE)
ASTRA SES-5	5 E	Betzdorf (LUX) and Redu (BE)
EUTELSAT HB-13G	13 E	Canical (PT), Cagliari (IT)
EUTELSAT 5WB	5W	Rambouillet (FR), Cagliari (IT)

EGNOS Governance and main stakeholders



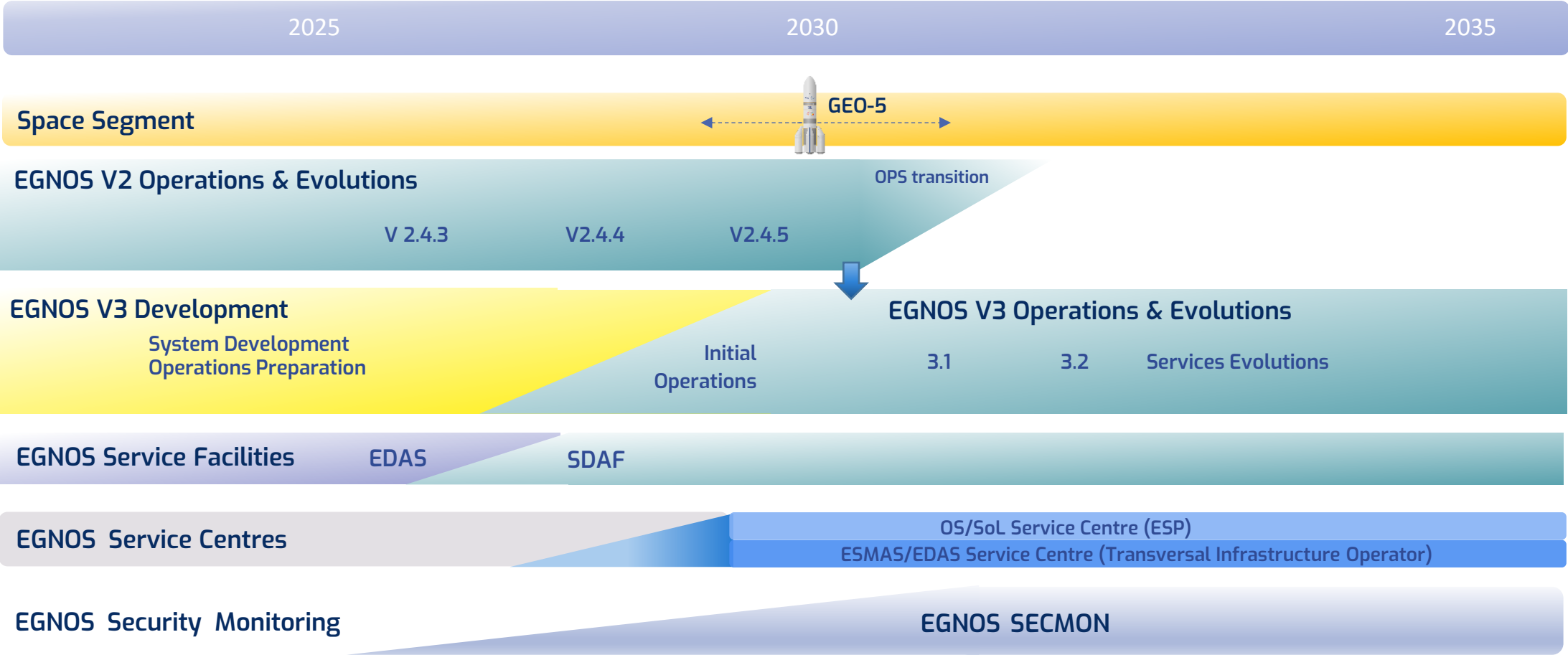


Introduction to
EGNOS

**EGNOS
infrastructure
and services
roadmap**

EGNOS
supporting
contracts

EGNOS Infrastructure Roadmap



EGNOS Services roadmap

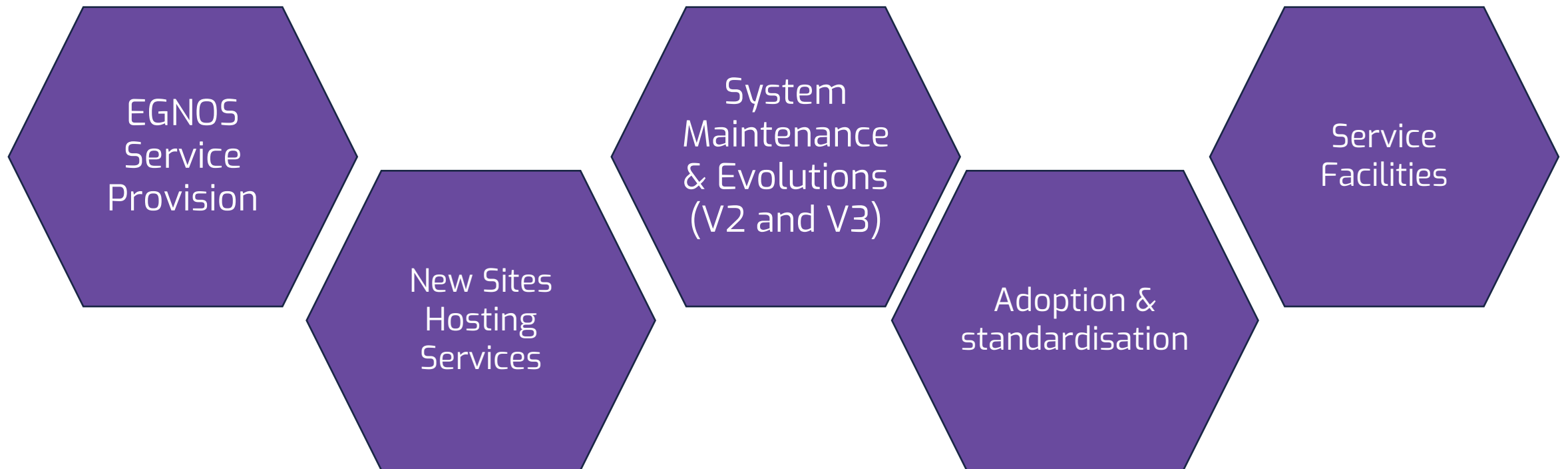
	2025	2030	2035
Constellations	Galileo OS FOC		GPS L5 FOC GPS L2P(Y) decommissioning (TBC)
Standards	Aviation	CAT-I Autoland SARPS MOPS DFMC SARPS Authentication MOPS Authentication	
	Maritime	IMO DFMC SBAS + H-ARAIM	IEC 61108-7 update
	Rail		TSI 2032
User Segment	DFMC prototyping	Maritime IEC 61108-7 receivers	EGNOS L1/L5-GPS/Galileo Commercial products Adoption support
SoL/OS	L1 augmentation		L1 + DFMC augmentation <i>Authentication* CAT-I Autoland L1*</i>
EDAS	EDAS L1		EDAS L1 + DFMC
ESMAS	ESMAS L1	<i>ESMAS L1 Pseudorange*</i>	ESMAS L1 + DFMC <i>User positioning*</i>
Rail*		<i>Rail L1 Pseudorange*</i>	<i>Rail L1 + DFMC Pseudorange*</i>

*under consolidation with EC



Contracts supporting EGNOS Exploitation

The contracts procured by EUSPA, supporting EGNOS exploitation, can be grouped in 5 categories:



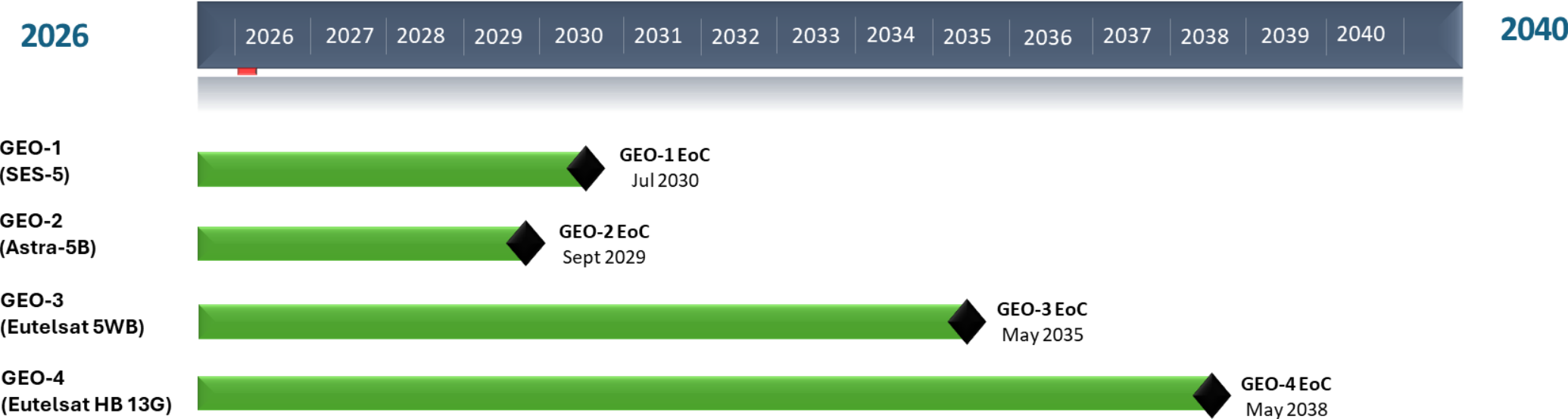
Past procurements

EGNOS Service Provision

- Scope:
 - Operation and maintenance of EGNOS Product and Service Facilities
 - Delivery of EGNOS Open Service and Safety of Life service
 - Contribution to EDAS/ESMAS service delivery
 - V2 to V3 Transition
 - Decommissioning of the EGNOS V2 infrastructure
- Type of Contract: Framework Contract, implemented through Specific Contracts
- Framework contract maximum duration 10 years
- Contract signed in July 2022. Prime Contractor: ESSP-SAS
- **Minimum share of competitive subcontracting foreseen in the contract**
- Maximum amount of the Contract: 850 M€

Past procurements EGNOS GEO Services

- Service Contracts with commercial satellite operators to host a SBAS navigation payload and maintain uplink stations
- Duration 15 years service provision
- Four contracts on-going (~100 M€ each) Eutelsat and SES
- **Minimum share of competitive subcontracting foreseen**



Past procurements

EGNOS Service Data Access Facility (SDAF)

- Scope:
 - New infrastructure to deliver EDAS and future EGNOS data dissemination services
 - Secure and control the access of users to EGNOS data through the Internet
- Type of contract: Innovation Partnership - competitive selection procedure, with two successive stages:
 - Stage 1 – Initial Design & Prototyping: completed
 - Stage 2 - Development, Factory Qualification & Site Acceptance: on-going
- Contract signed: January 2025
- Duration: 2 years development + maximum 1.5 years maintenance
- Contractor: GMV
- **Minimum share of competitive subcontracting foreseen in the contract**
- Contract value: >4 M€

Past procurements

E-GNSS Service Demonstrator

- Type of Contract: Framework Contract, implemented through Specific Contracts
- Scope of SC1:
 - Modular demonstration platform that will support the roll-out and adoption of new EGNOS and Galileo services (but also Copernicus and GOVSATCOM/IRIS2) and their evolutions.
 - Design, development, deployment and validation of the platform, including GEO SIS broadcast capabilities.
 - Design, development, deployment and validation of the SBAS DFMC module
- Framework contract maximum duration 4 years
- Contract signed: December 2025
- Contractor: Thales Alenia Space France
- **Minimum share of competitive subcontracting foreseen in the contract**
- Maximum contract value: 10 M€

Past procurements

EGNOS V2 maintenance

- Scope:
 - Maintenance services for EGNOS V2 product and purchase of spares
- Type of Contract: Framework Contract, implemented through Specific Contracts
- Contract Signature Date: December 2022
- Duration: 4 years + 2 years extension
- Prime Contractor: Thales Alenia Space France
- **Minimum share of competitive subcontracting foreseen in the contract**
- Maximum amount of the Contract : >100 M€

Past procurements

EGNOS V2 Evolutions LIFEX1

- Scope:
 - Development of several EGNOS V2 product releases to manage system obsolescence resolution
 - Introduction of a new RIMS site in Ermis (Cyprus), Paphos (Cyprus) and in Seville (Spain), Security enhancement, Anomalies correction
- Type of Contract: supplies contract
- Duration: 5 years
- Contract signed in April 2025
- Prime Contractor: Thales Alenia Space France
- **Minimum share of competitive subcontracting foreseen in the contract**
- Value of the contract : >80 M€

Past procurements

EGNOS V3 Development

- Scope:
 - EGNOS V3.1 (Legacy services): will ensure continuity of EGNOS L1 services with better performance and increased security
 - EGNOS V3.2 (DFMC services): will support a new SBAS service, transmitting on the L5 frequency, which will augment Galileo L1/E1 – L5/E5 along with GPS
- Contract signed in 2018
- Managed by ESA in the name and on behalf of EUSPA who is the contracting authority
- Prime Contractor: Airbus Defense and Space
- **Minimum share of competitive subcontracting foreseen in the contract**
- Value of the contract : >400 M€

On-going procurement DFMC SBAS/H-ARAIM Receiver Demonstrator

- Closed for submission. Evaluation on-going, invitations to bidders for Phase II to be sent.
- Scope:
 - Development of high maturity civil aviation receivers to demonstrate the feasibility of a next-generation DFMC SBAS and H-ARAIM receiver, implementing Navigation Message Authentication (NMA) functionalities, including OSNMA, to increase user segment resilience to Radio Frequency Interference.
- Envisaged signature date: September 2026
- Envisaged duration: 5 years
- Envisaged value : 4M€ per contract (two direct contracts)
- **Minimum share of competitive subcontracting foreseen in the contract**
- [EUSPA/NP/14/24 - Navigation Integrity & GNSS User Authentication Receiver Development \(NAVIGUARD\) | EU Agency for the Space Programme](#)

On-going procurement Fundamental Elements EGNOS Maritime receiver

- Grant closed for submission. Selection on-going.
- Scope:
 - To develop a ready to market receiver implementing IEC 61108-7 standard that will enable vessels to take full advantage of the EGNOS Safety of Life Assisted Service for Maritime users (ESMAS)
 - The grant looks to support the design, development, testing, certification and demonstration of an EGNOS-based receiver that fulfils the requirements set by the IEC 61108-7 standard (the standard for SBAS L1 shipborne receivers).
- Envisaged signature date: May 2026
- Envisaged duration: 4 years
- Maximum value : 2M€ (up to two project funded, maximum EU co-financing rate of eligible costs is 70%)
- [EUSPA/GRANT/04/2025 - EGNOS maritime receiver implementing IEC 61108-7 standard](#)

Upcoming procurements & activities

- **Market Consultation on the provision of an EGNOS geostationary navigation payload service (GEO-5)**
- **Addressed to:**
 - Owners of geostationary satellites able to embark a SBAS payload (Hosted payload - similar to GEO-1 to 4)
 - Industrial players capable of procuring, launching and operating a dedicated small GEO satellite, including the navigation payload (Dedicated GEO satellites embarking the navigation payload)
- **Technical needs**
 - Orbital positions between 10° W and 30.5° E - Transparent bent-pipe navigation payload
 - Two channels for L-band downlink: L1/L5 signal compliant to ICAO SARPS Annex 10
 - Third carrier in E5b frequency band
 - Operations Start Date (OSD): between 2027 and 2032 for a duration of 12/15 years
- Market Consultation closed
 - [EUSPA/MC/27/24 - Market Consultation on the provision of an EGNOS geostationary navigation payload service \(GEO-5\) | EU Agency for the Space Programme](#)

Upcoming procurements & activities

- **Market Consultation on the development of Multi-Element Antenna for GNSS RFI protection - Development for Civil applications:**
 - Purpose of this Preliminary Market Consultation:
 - Collect information regarding the interest in developing an airborne multi-element antenna for GNSS RFI (Radio Frequency Interference) protection
 - Gather views on civil applications that would benefit from the potential use of multielement antennas (e.g. aviation, maritime, rail, etc.)
 - Identify challenges in the development and implementation of multi-element antennas in civil applications in particular for the airborne market
 - Gather information on the budget needed for the development of a mature multi-element antenna (e.g. TRL 7) for civil applications, to aid standards developments and foster its use, particularly for the airborne market
 - Market Consultation closed

[Market Consultation on the development of Multi-Element Antenna for GNSS RFI protection Development for Civil applications | EU Agency for the Space Programme](#)

Upcoming procurements & activities

- **Machine Learning for Improved EGNOS and Galileo Operations and Service Provision**
 - Scope: Design, Development and Delivery of a prototype tool which, thanks to machine learning algorithms, helps to improve decision and planning processes of EGNOS and Galileo, for operations and service provision aspects.
 - Estimated total Value : 1M€
 - Prior Information Notice:

[Prior Information Notice - Machine Learning for Improved EGNOS and Galileo Operations and Service Provision | EU Agency for the Space Programme](#)



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