

OSNMA success stories and new support tools



EUSPA OSNMA Day 2026

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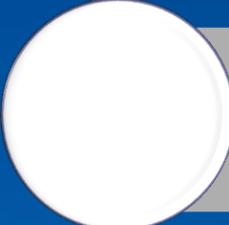
25/02/2026



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OSNMA market and users' overview

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OSNMA Success Stories

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New support tools

OSNMA users overview (1/2)

Benefits

- In safety-critical domains such as aviation, maritime, rail, and autonomous vehicles, OSNMA provides a vital safeguard against spoofing, supporting operational safety and resilience.
- Sectors requiring verifiable geolocation data for regulatory or legal compliance –such as agriculture, logistics, and insurance– can benefit from OSNMA’s ability to validate the authenticity of positioning information.
- Its cost-effectiveness, broad applicability, and compatibility with existing receiver hardware (via software updates) further strengthen its appeal.

Challenges and barriers for adoption

- Concerns about energy consumption in battery-constrained devices
- Longer authenticated first-fix times
- Galileo-only authentication

OSNMA users overview (1/2)

Feedback from the User Consultation Platform 2025

In your opinion, which market sectors benefit the most from the launch of the Galileo OSNMA service in July 2025?

Mass market (e.g. smartphone-based, autonomous vehicles)



Liability-critical applications (e.g. timing & synchronization, telecom, energy, finance)



Transport and professional (e.g. aviation, rail, maritime, surveying, agriculture)



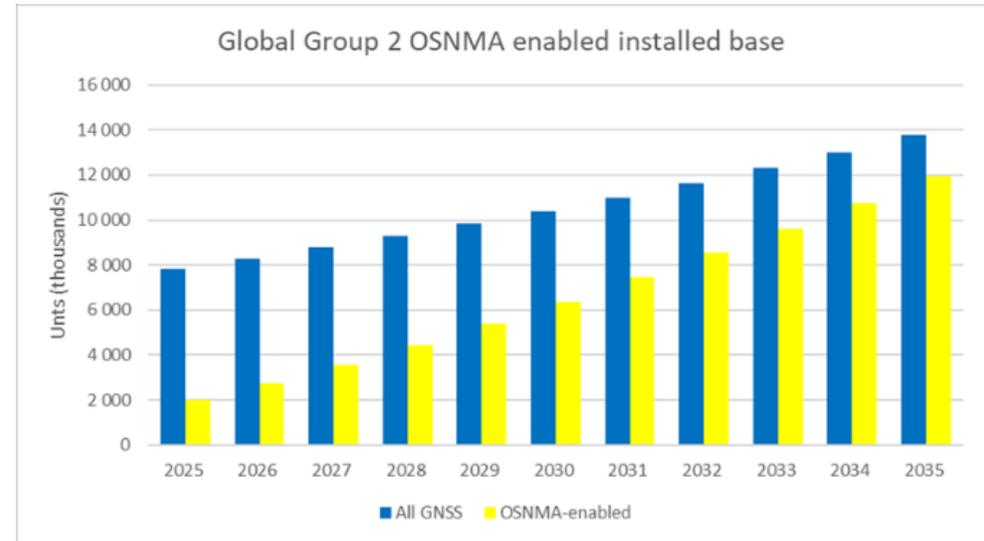
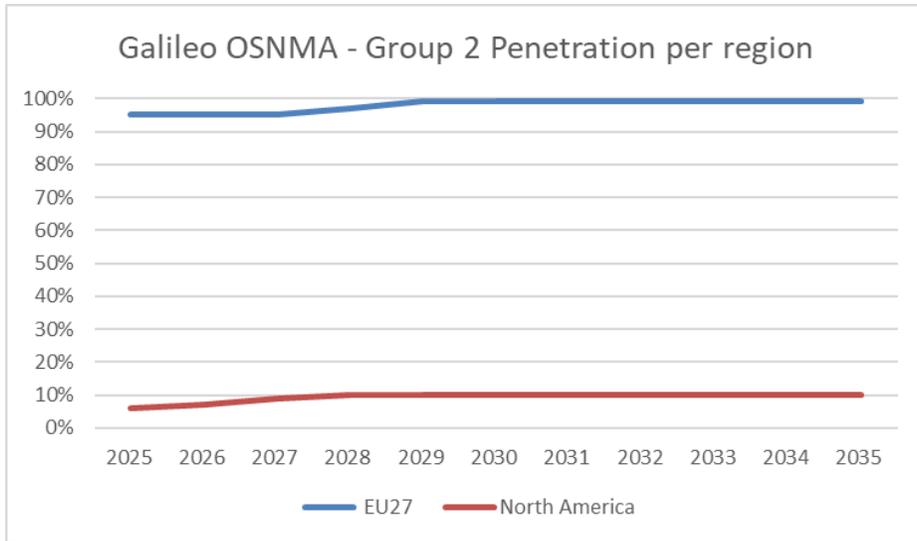
Others



Apart from smart tachographs, are you familiar with specific applications where OSNMA is used/relevant?

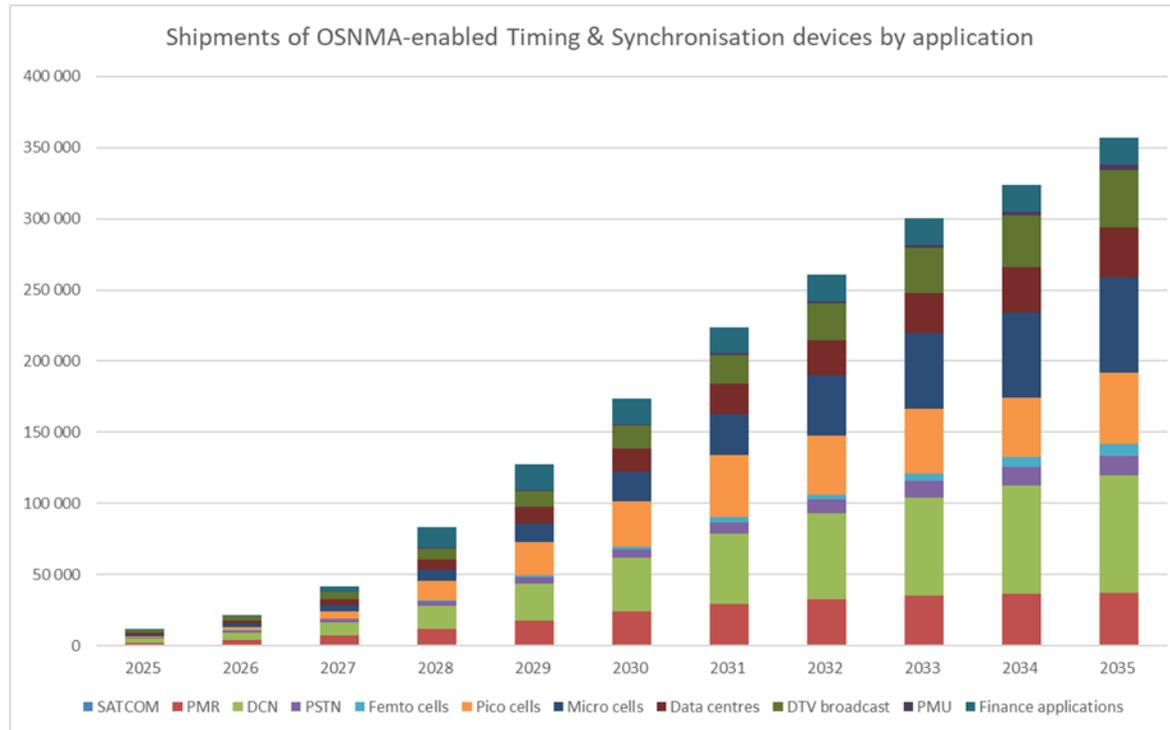


OSNMA for automotive: smart tachographs market overview



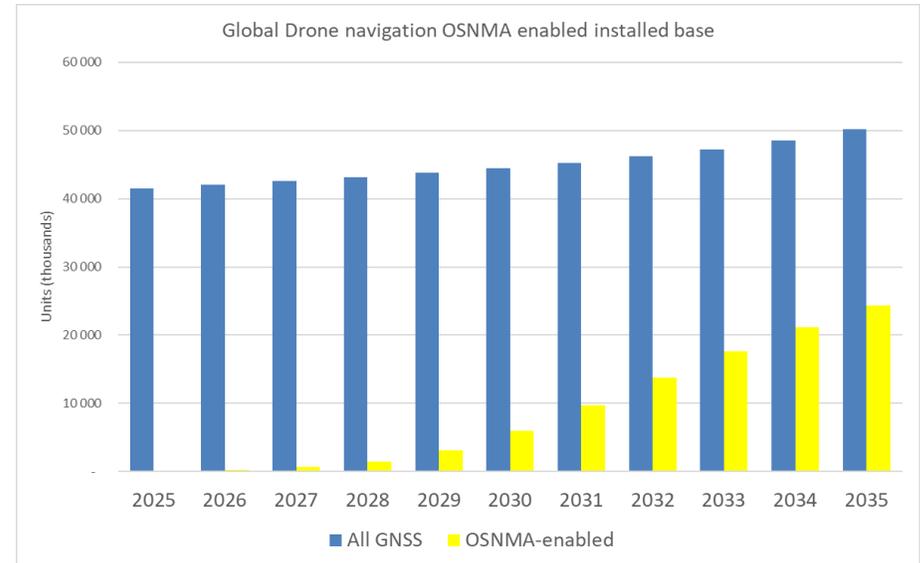
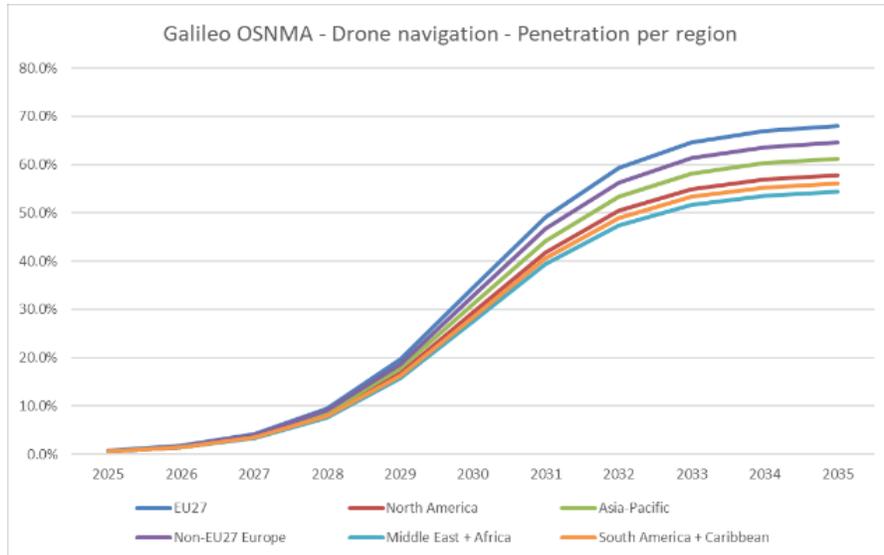
- **EU Regulation (EU) 2021/1228 introduced the mandatory use of the Galileo OSNMA by smart tachographs.** For vehicles put into service after December 24, 2025, the OSNMA version is mandatory.
- In Europe, uptake is expected to reach almost **100% penetration by 2028** across heavy goods vehicles, buses, and light commercial vehicles
- Outside Europe, adoption remains more limited, with North America projected to reach **approximately 10%**
- **Current market: around 2M units**, expected to reach 10M already in 2034

OSNMA for Timing & Synchronization: the Critical Infrastructure market overview



- Current market: <20k units
- The **CEN/CENELEC standard for Galileo Timing Receivers** includes requirements for OSNMA processing → recognized as a major milestone in mainstreaming secure GNSS timing for the telecom networks, energy grids, railways, and financial infrastructures
- The path toward widespread OSNMA adoption is expected to be gradual and shaped largely by application needs, regulatory stimuli, and industry readiness

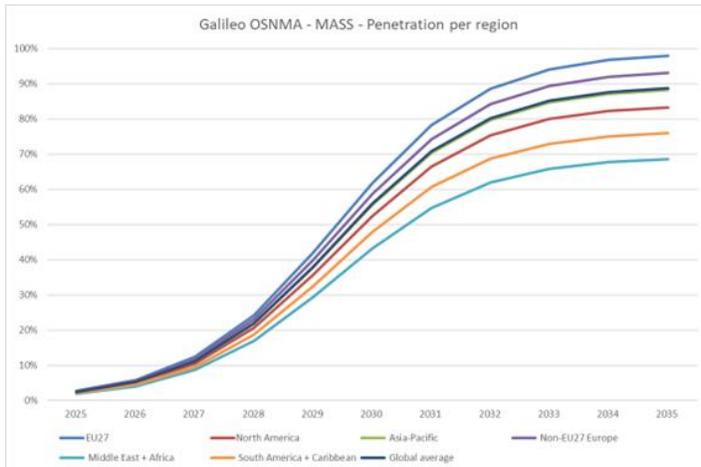
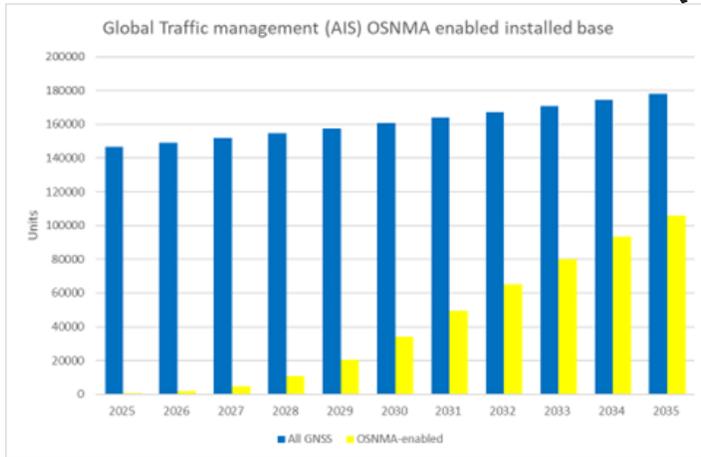
OSNMA for Aviation and Drones: drone navigation market overview



- **Drone GNSS receiver market:** forecasts suggest that **OSNMA could reach 70% in the EU27**, constrained primarily by its energy demands
- The relatively short four-year drone replacement cycle will support faster turnover once adoption accelerates
- **Aviation GNSS receiver market:** recent **OSNMA endorsement by the ICAO** Navigation Systems Panel

OSNMA for maritime:

Expected to be an enabler for future applications such as VDES and Autonomous Vessels (MASS)



- Occurrences of **spoofing along maritime shipping routes are on the rise**, with hundreds of events happening daily on the Baltic Sea, Black Sea and near narrow passages such as Suez Canals and Strait of Hornuz.
- Whilst the use of OSNMA for navigation is dependent on IMO ruling, **industry and end users are already looking at OSNMA** as a solution for the spoofing issue.
- To **ensure reliable positioning reporting** for vessel traffic management, **OSNMA as an authentication means for VDES** is widely discussed at fora such as IALA (e.g. G1117).
- **Vessel navigation and** more importantly that of **autonomous vessels is looking at robust solutions to mitigate spoofing**.
- Uptake is expected to accelerate once IMO takes a positive stance on this matter.

Galileo differentiators are integrated in receiver models: OSNMA, HAS and SAR RLS receivers

OSNMA-enabled receivers

Manufacturer	Model	Segment or Applications
ANAVS	AROX-PPP	Autonomous vehicles, robots, UAVs and vessels
ANAVS	V-ROX	Autonomous vehicles, surveying and mapping, machine control
AUMOVIO	VDO DTCO 4.1a	Smart tachograph
Chipcraft	NaviSoc	UAV, agriculture, road
FDC	ULTRA DRACONAV	Security-critical applications including road, smart tachograph or timing
Juniper	GNS3	Surveying
Promarine	proGPS 2002	Maritime
Promarine	proGPS 2002	Continuously Operating Reference Station (CORS), Monitoring
Qascom	QN400-S	Space navigation in LEO, Precise Orbit Determination (POD), launchers and Moon navigation.
Qascom	QN500-S	Space navigation in LEO, Precise Orbit Determination (POD), launchers and Moon navigation.
Quectel	LC29H	Precision agriculture, robotics, drones
Quectel	LC99T	Timing
Septentrio	mosaic-X5	Surveying, precision agriculture, autonomous vehicles
Septentrio	PolaRx5	GNSS reference stations, scientific and monitoring, space
Septentrio	TUR-N	Testing

>20 models implementing OSNMA

- Examples of EU players:
 - STMicro
 - Septentrio
 - u-Blox
 - Promarine
 - Qascom
- OSNMA-enabled smart tachographs rolled out by Aumovio and Stoneridge



>20 models implementing RLS

- Examples of EU players: Jotron, Safran
- Wide commercial offer. RLS present in the high-end models



>100 models implementing HAS

- Examples of EU players: ANAVS, Beyond Gravity, FLIR Transpondertech AB, Kongsberg Discovery, uBlox



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OSNMA Success Stories

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New support tools

Fundamental Elements concluded projects by service

SERVICE EXAMPLES of receivers developed (not exhaustive list)

OSNMA



HAS

New projects currently on-going, targeting receivers development in markets like:

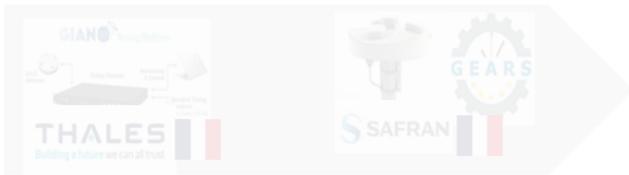
- Timing & Synchronisation
- Energy
- Telecommunications
- Finance

ARAIM

SAR/RLS

- Maritime & IWW

Timing & Sync



SBAS



13 projects successfully concluded implemented OSNMA



PATROL



Concluded

Fundamental
Elements
Success Story



Product Type: Position Authenticated Tachograph with OSNMA

Success Story: Smart tachograph implementing OSNMA fit for the regulation

Project output:

First GNSS terminal with Galileo Authentication (OSNMA) for smart tachograph,
using commercial GNSS receivers

First Mass Market receiver implementing spoofing detection and mitigation
techniques for sophisticated attacks (i.e. SCER)

Support to EC/EUSPA for the consolidation of the OSNMA protocol supporting the
Experimentation phase.

Support to EC/EUSPA for the consolidation of the Smart tachographs' regulation
and the inclusion of OSNMA

EU funding: 2,3M EUR

Duration: 35 months

PARTNERS:

Qascom (Italy)

FDC (France)

GMV (Spain)

Actia (France)

UNIPD (Italy)

STMicroelectronics (Italy)



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Fundamental Elements Success Story



Product Type: Timing receivers implementing Galileo standards

Three receivers compliant with CEN/CENELEC EN 16605:2024 standard and implementing OSNMA

CLEPSYDRA

Robust Galileo **Timing Receiver for Critical Infrastructures** targeting the **Energy, Telecommunications, Finance and Transportation** domains, as well as Governmental services. Real-time neural networks enabling multipath/NLOS detection, anti-jamming, anti-spoofing and improved ambiguity resolution.

EU funding: 1.2MEUR
Duration: 18 months



STARGATE

Professional Timing Receiver module, supporting dual-frequency Galileo, OSNMA authentication, T-RAIM, and robust holdover operation. Intended to be integrated into **timing servers and synchronization units used in telecom, energy, and other critical infrastructure domains.**

EU funding: 760kEUR
Duration: 21 months



GAL4TSync

Galileo **Timing Receiver for Critical Infrastructure Networks**, intended to meet the demands as a primary timing source.

EU funding: 860kEUR
Duration: 24 months





Concluded

ASGARD



Product: Multi-constellation and double frequency (E1/E5) maritime receiver

Project output:

- Complete, close-to-market shipborne integrated equipment
- Type approval IEC 61108-3 for static and dynamic laboratory tests
- ✓ Improved performance and robustness through dual-frequency and OSNMA capabilities
- ✓ First use of anti-spoofing cybersecurity protection technology in maritime applications

ASGARD is cost-efficient GNSS solution that aims to encourage the penetration of E-GNSS in the maritime domain,

EU funding: 1 mil. EUR
Duration: 31 months



Fundamental Elements Success Story

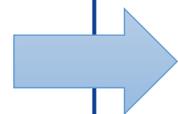
Ongoing project

ISLET

Product: Galileo HAS enabled positioning and navigation solution for Maritime and IWW

Project foreseen output:

- Integration of Galileo OSNMA and HAS in a Maritime GNSS Receiver
- Suitable to be embedded within the **vessel navigation equipment** for Maritime and IWW operations.
- ✓ The receiver will continue the **promotion of the Resilient PNT** concept started in ASGARD, and ease the introduction of Galileo HAS in Maritime and IWW standards



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NEXESS



CONSUMER SOLUTIONS,
TOURISM AND HEALTH

Ongoing
project

Fundamental
Elements
Success Story



Product Type: OSNMA support in ultra low power, reconfigurable GNSS chip

Success story: Secure and resilient end use of mass market GNSS receivers enabled by OSNMA

Project Output:

- Galileo decoder with OSNMA support
- Authentication of satellite signals
- Authenticated ECS and Timing data is used for navigation.

Project Status:

- In final stage to test authenticated signals on Qualinx silicon.

Target Customers:

- Battery-operated, and space constrained devices (e.g. wearables, trackers, mobiles, IoT...)

Plans for future:

- Integrate OSNMA into the current Qualinx product offer, as well as future products in roadmap

EU funding: 511K EUR

Duration: 28 months



GNSS SoC



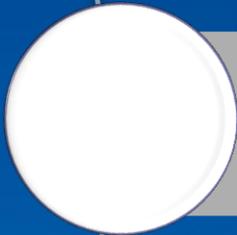
PARTNERS: 

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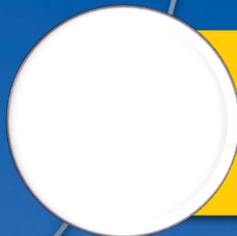
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OSNMA market and users overview



OSNMA Success Stories



New support tools

Support to users to accelerate adoption of differentiators

User and receiver guidelines

→ **CEN/CELENEC standard EN 16605**

→ **IALA Guideline G1117 VDES: Proposal to update auth. and OSNMA sections** accepted at IALA's DTEC5 committee (Oct 25)

→ **Drones EUROCAE WG105 GNSS guidelines**



Tests with users in operational environments

Users can request support to the GNSS Service Centre (GSC) in dedicated testing campaigns e.g.:

- Receiver installation
- Data collection
- Data processing



Example in 2025: Inland waterways in Germany / OSNMA & HAS+IMU (ANAVS and WSV)

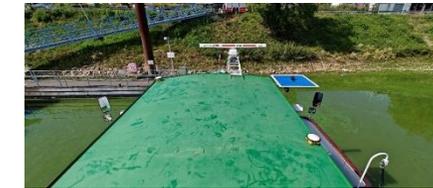
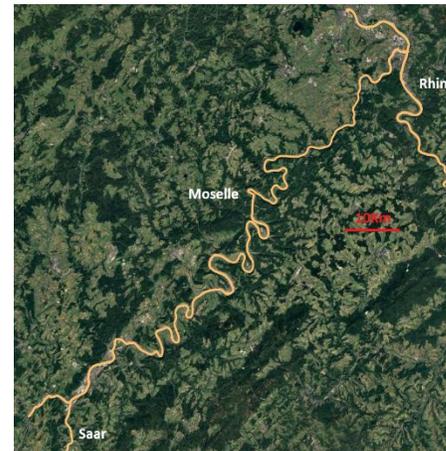
OSNMA in Aviation and Drones

AVIATION

Galileo OSNMA has been formally endorsed by the ICAO Navigation Systems Panel (NSP) for inclusion in Annex 10 Vol I Amendment 96, advancing it to the ICAO State Letter process for approval

DRONES

EU Drone Strategy 2.0: "European Trusted Drone" label could benefit from OSNMA



Webinars & Trainings

Available on demand

EGNSS training for drone operators:

- GRC, Noordwijk, April 2025
- UAV FTC, Germany, October 2025



GNSS and EO in bathymetry, water levels and environmental monitoring

- Galileo, HAS, OSNMA, SAR
- EO synergies
- Related projects



- EUSPA, GSC and UPRC
- Galileo, HAS, OSNMA, Timing
- Projects, etc
- Galileo HANDS-ON

On-site training focussed on HAS and OSNMA

Follow-up collaboration in education, research, and Galileo applications



x2 dedicated training/awareness sessions

- EUSPA, GSC
- Galileo, HAS, OSNMA, SAR
- EO synergies
- Projects, etc

- EUSPA, GSC
- Galileo, HAS, OSNMA, SAR
- EO synergies
- Projects, etc
- Galileo HANDS-ON

Operational interest and needs on receiver compatibility, maritime security, and Galileo safety services.

Participation of the **Panhellenic Association of Shipmasters and Bridge Officers**, students from the **Merchant Marine Academies**, **The Nautical Institute** Hellenic Branch, **HELMEPA**, and many cadets and trainee Deck Officers from **AEN Macedonia**.

Engagement of regional/local operational users remains a key aspect.

Make it with Space, a new demand driven scheme, launched!

- [EUSPA-OP-07-25 - "Make it with Space" | EU Agency for the Space Programme](#)
 - Bridges the gap between supply and demand
 - Fosters commercialisation of EU Space solutions, building on solutions developed by our industry, including SMEs and startups, and linking them to end users



Submission deadline 16/04/2026 - 23:59

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Linking space to user needs

Get in touch with us

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