#EUSpace

UCP 2025 Outcomes

Plenary Session – 5 Dec. 2025

USER CONSULTATION PLATFORM 2025

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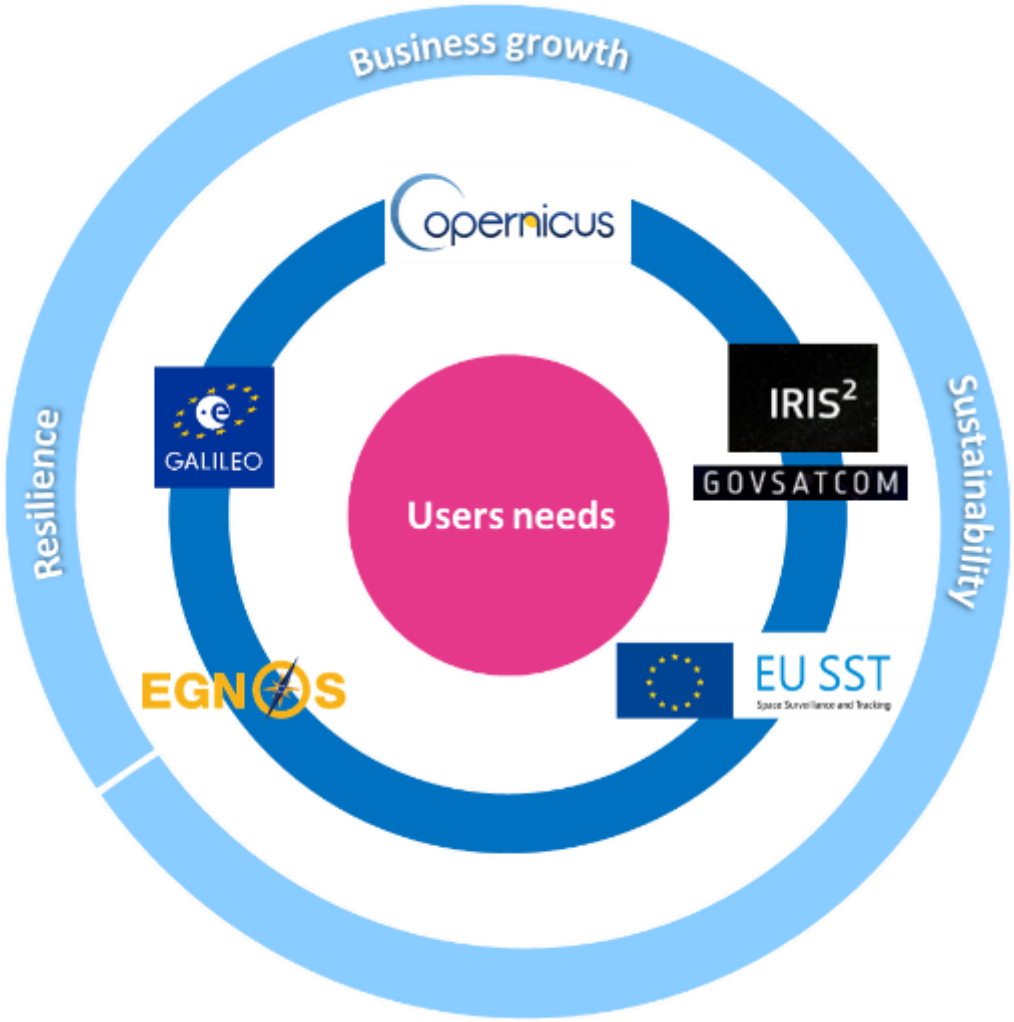
User consultation platform
the voice of the users of EU Space



UCP 2025 – Objectives and Impact

1. **Collect needs** up-to-date user needs and requirements for GNSS, EO and SATCOM via a structured consultation
2. **Identify gaps** where EU Space Programme do not fully meet user or application needs (performance, technology, adoption)
3. **Define actions** and concrete priorities for the EU Space Programme's evolution and market uptake

150+ interviews with end users and service providers along the year

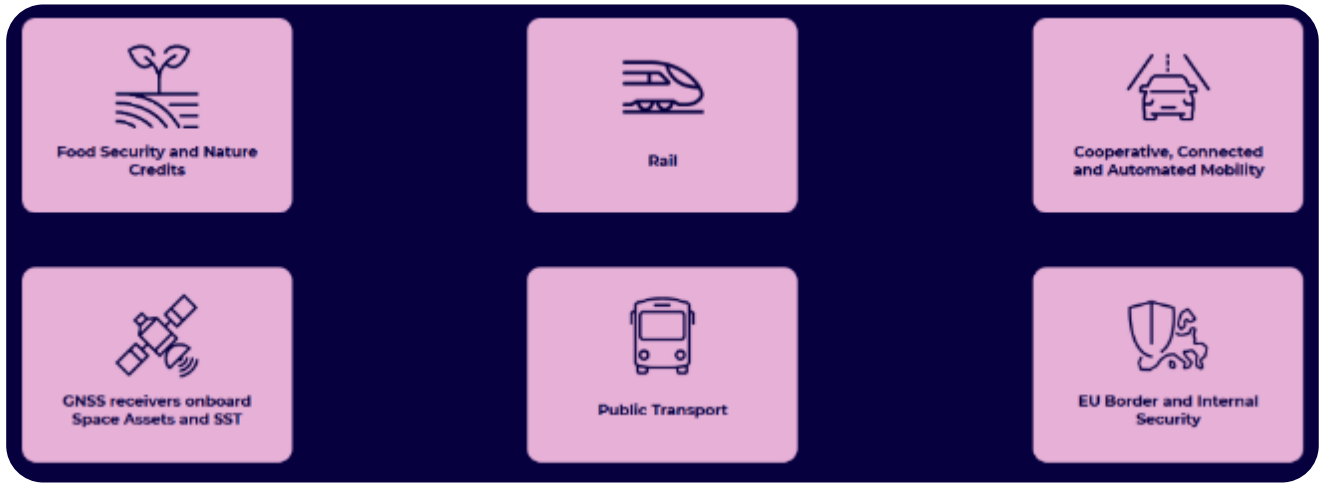
600+ Participants from across Europe and beyond

User Consultation Platform 2025

110+ Users speakers from 10+ industries

6 Thematic sessions

UCP 2025 sessions across six key domains



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Marta Krywanis
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Paulus Spaanderman
Car2Car Communication Consortium

Copernicus Europe's eyes on Earth

GALILEO EGNOS

GOVSATCOM
IRIS²

EU SST Space Surveillance and Tracking

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Main users needs and requirements

EU Border & Internal Security

Despite wide market segment and heterogenous applications, there are commonalities for use of satellite (GNSS and EO) technologies and services

- Multi-GNSS/Galileo OS based products (available on the market) and EO already **used in operations**
  - **Galileo OSNMA** perceived (but not yet adopted) as key enabler to increase integrity and resilient/reliable position and time information, across all applications
  - Possible value of Galileo **EWS** in C-UAS operations
- Concerning use of GNSS/EO, **synergies** among EU Border and Internal Security applications
  - to reduce costs, simplify personnel effort/training/operations and maintenance
  - To enhance resilience and reliability in high range of contexts and complexity
  - To increase situational awareness across different operating scenarios of response to threats and challenges
  - To improve effectiveness and safety (e.g. of operations, operational personnel)
- **Combination of satellite with other technologies and techniques**, to address specific needs and use cases
  - AI and ML for automation, data filtering and intelligence; Big Data analytics for processing
- Interest towards cutting-edge technology, more performant and advanced solutions/services (including Galileo OSNMA and EO)
  - **Ready-to-the-market and trustfully products** (i.e., integrated customised solutions, no prototypes, TRL 7+)
  - Involvement of users in the products completion, in view of the operational deployment
- **Crucial gaps**
  - Need of privileged and facilitated accessibility to EO data by specialists, practitioners and LEAs
  - Difficult integration and lack of interoperability among different systems/solutions/data formats
  - Insufficient awareness by specialists, practitioners and LEAs on EO/GNSS services and synergies
  - Legal and technical obstacles limiting the potential of EO data in court proceedings (mainly caused by lack of common guidelines and procedures, privacy concerns)

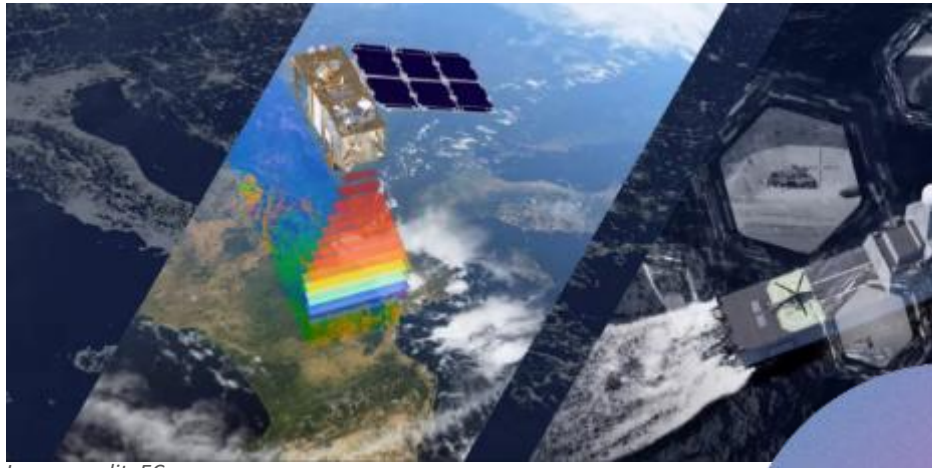

Image credit: EC

GNSS Receivers Onboard Space Assets

User Needs & Applications:

- GNSS-Reflectometry and Radio-Occultation are mature applications going to spaceborne dedicated receivers targeting accuracy of 2–5 cm (mainly for altimetry applications), 99.9% availability.
- GNSS adoption for launchers has to reach an accuracy of <10m for Ascent and ~1 m for stage recovery/orbit injection, with full integration with inertial systems.
- INAV improvements providing faster convergence
- Opportunities for in orbit testing and validation.

Galileo Differentiators:

- HAS receivers tested in-orbit and Service Level 2 declaration awaited from users.
- OSNMA will support emerging applications (e.g. interference mapping, authenticated geolocation of Imaging products~~),~~
- EWSS has been successfully tested from the Moon surface by the reception of Galileo dummy messages created on purpose.

Trends & Challenges:

- Space market is growing due to the proliferation of applications, the evolution of GNSS toward PNT for what concerns the outer space.
- More economic European space components supporting EU space projects
- Clear roadmap of the evolution of services.
- GNSS receivers development can be limited by the equipment like receiving antennas characteristics onboard space assets.

Image credit: EC

Space Surveillance Tracking

User Needs:

Collision Avoidance

- Need for more automation to support faster, easier integration into users' internal systems.
- Request for more standardised data formats to enable effective in-house analysis.
- Interest in gaining access to the EU SST catalogue.

Re-entry Analysis

- Risk classification adapted to aviation users.
- Need for coverage of all types of re-entries, not only uncontrolled artificial objects.

Trends & Challenges:

- The growing number of space actors and rapid satellite proliferation require stronger coordination to maintain space safety.
- The Global SSA Coordination consultation, focused on SST information sharing, has just been opened to registered CA users to collect feedback on how broader SST information sharing could improve coordination and overall space safety.

Image credit: EC

Food Security and Nature Credits

Carbon Removals:
Better Accuracy and Standardization to Support Carbon Assessment

The measurement of biomass is essential for carbon removal projects and carbon credits but remains difficult and not always accurate when only EO is applied (ground truth + in-field inspection needed)
Nature credits is a new and complex market, supported by the EU and vital for the preservation of the biodiversity, where the scientific assessment of the credits is key
The lack of standard or of a methodology that includes certified EO/Copernicus is a barrier for adoption

GNSS for Agriculture:
Higher Performances for Agribots

The rise of autonomous machinery requires high performance GNSS: centimetric horizontal accuracy, availability >99–99.9% and convergence in seconds with high levels of continuity, integrity and resilience to spoofing/jamming

Using **top-notch autonomous robotics** contributes to never ending needs for increasing efficiency in the yield production with low environmental footprint + diminish labour shortage issue

Food Security:
Reliable Access to Harmonized High Quality Data

Reliable EO data for harvest: Weekly cloudless observations and <3-day cloud-free revisit are prioritised over finer spatial resolution for yield estimates and harvest planning while high resolution data is needed for small scale users

In-situ data still challenging to get and very much needed

Measuring water to protect crops: Daily thermal infrared with high resolution is needed for soil moisture, evapotranspiration and water-stress detection;

Soil data is a missing dataset: High-quality, harmonised global soil data (up to 30 cm depth) and SOC maps with parcel-level uncertainty are essential for food security, carbon markets and regulatory compliance

CAP Eco-Schemes:
The Need For Operational Services

The need for operational services, **turnkey solutions and ''ready-to use'' services at scale**

A spatial resolution <5m necessary to effectively **monitor small fragmented, and narrow parcels** but even more **importantly small features on large parcels**

Public Transport

GNSS

- **GNSS already powers day-to-day operations**: with multi-constellation EGNSS receivers widely used in buses and trams.
- **Users demand increased performance**: availability >99.9%, ~1 m horizontal/vertical accuracy, 1–10 Hz updates, <10 s TTFF (<5 s hot), and latency down to <1 s for emerging safety-critical and automated driving functions.
- **Gaps and opportunities**:
    - Awareness for PTOs to request Galileo in pubic procurement
    - Indicative performance in real user environment via dedicated tests
    - Range integrity for Galileo HAS
    - OSNMA for ticketing to be explored
    - Affordable, low-power receivers with HAS/OSNMA
    - EWSS to alert drivers

EO

- **EO is emerging as a planning and resilience tool for public transport,** supporting network planning, climate-risk mapping (heat, flooding, landslides) and monitoring of infrastructure.
- **Users need very high resolution** locally (0.25–1 m for depots, stations, vulnerable links) and ~10 m city-scale layers, 4–8-hour revisit and ≤8–24-hour latency, plus pre-processed, GIS-ready products and simple, shareable licensing.
- **Gaps and opportunities:**
    - Awareness for PTOs
    - Support to move from tests to operational implementation in real users
    - Cost benefit analysis with real data to be published to show real benefits and trigger wider adoption
    - Integration of Copernicus date in passenger facing apps
    - Simplified integration and data access

Image credit: Unsplash

Automotive

Strong interest from automotive industry: large attendance from OEMs.

OEMs are actively testing HAS for CCAM: This is a large first step to evaluate deployment.

- HAS testing shows consistent performance.

There is **no perfect sensor for automated driving** – Sensor fusion of HAS and other mechanisms are essential to meet high accuracy and integrity demands.

The **demand for GNSS performance increases** with more ambitious level of automations.

Addressing GNSS limitations is essential to reach urban environment demands.

Trustworthy and tamper-resistant signals, like **OSNMA**, are essential not only for reliable enforcement but also for CCAM, where they improve road safety and prevent tampering.

Image credit: CCAM

SATCOM

Non-Terrestrial Networks connectivity is now appearing in the roadmaps of OEMs. To ensure the support of CCAM use cases it is essential as **extension to the terrestrial networks**.

Consumers are concerned about safety: use cases such as Emergency Call and Local Hazard & Traffic Information, are valued by end users, and represent an opportunity for **narrowband/wideband** NTN ramp up, expected in the upcoming years.

There is willingness to pay by the user for broadband use cases, but significant technological **challenges** should be addressed.

The stakeholders understand that cooperation and convergence is needed, requiring further discussions.

The **UCP has been recognized as relevant platform for these discussions**.

Rail

EO

The rail community acknowledged that **EO based ground motion and vegetation monitoring** are operational and requirements are maturing.

General need for more resolution or more revisit on Copernicus outputs is requested. IMs rely on commercial VHR, aerial and drones to get frequent revisits and better resolution.

Integration with other systems (radar, optical, etc) left to operators.

Extreme heat induced hazards an issue across Europe. EO aided risk adaptation measures being researched, **users sharing data** for validation could speed up operational adoption.

SAR evolution need: Investigate the L-band potential to extract the soil moisture content of the near sub-surface

GNSS

Important progresses made in the development of safety-critical **GNSS-based solutions** focusing on **EGNOS** for rail service, **certification** methodology and a common functional **architecture of ASTP**

Low cost & low energy consumption enable the development of more and more **non safety-critical applications and digitalisation**

New Galileo Services: Neither **HAS, nor OSNMA are exploited** – railways are looking for relevant business case.

SATCOM

European railways are **transitioning from GSM-R to FRMCS** to support data-intensive, safety- and mission-critical applications (ETCS signaling, real-time monitoring, voice, operational data).

SATCOM functional organisation has been clarified, providing a clear role for IRIS² as a sovereign backbone for rail resilience and redundancy.

SATCOM integration is considered a key player to guarantee **a cost-effective service**, especially in rural, remote, and cross-border areas for redundancy and global coverage.

Continuous alignment of SATCOM system capabilities and Railway system requirements will be necessary to ensure a smooth use of SATCOM in railway operation on the long term

Image credit: Unsplash

Recommendations to the EU space programme

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Thank you for helping us to shape the future of EU Space!