

USER CONSULTATION PLATFORM 2023

PLENARY SESSION MINUTES OF MEETING

Meeting Date	08.11.2023	Time	09:30-10:30
Meeting Called By	EUSPA	Location	Seville (hybrid event)
Minutes Taken By	Marc Leminh	Next Meeting Date	UCP 2024
Attendees	All participants to the User Consultation Platform Plenary Session		
Distribution	All participants to the 2023 User Consultation Platform, EUSPA, Public		

Agenda item and guests	
1. Introduction	
	Carmen Aguilera
2. Opening	
	Rodrigo Da Costa
3. Pannel session	
	Valentin Barreau (SNCF) Adam Smialek (Iceye) Georg Larscheid (Class) Michael Doherty (PAN European Network of customs and Practitioners) Laura Moreno (Earthpulse) Valentin Alfaya (Ferrovial) Ana Luz (City of Seville)
4. Conclusion	
	Carmen Aguilera
Plenary moderator	Carmen Aguilera

1 MINUTES OF MEETING

Introduction
<p>Carmen Aguilera started the plenary session and introduced the 2023 UCP. She welcomed the user representatives on stage:</p> <ul style="list-style-type: none"> • Valentin Barreau, head of SNCF localization team and representing the rail session • Adam Smialek space system engineer at Iceye representing the space and the SST session • Georg Larscheid, Vice President digital business from Class representing the agriculture and forestry session • Michael Doherty, technology expert in the PAN European Network of customs and Practitioners representing the resilient societies session

- Laura Moreno, CEO of Earthpulse representing the environmental session covering also biodiversity and climate
- Valentin Alfaya, sustainability director in Ferrovial representing the transport infrastructure topic from all transport modes, especially road and public transport
- Ana Luz, head of Seville unit in direction General de Trafico representing the road and automotive session.

Carmen Aguilera then introduced Rodrigo da Costa, Executive Director of USPA who gave a welcome to the audience and the panellists.

Opening

Rodrigo Da Costa welcomed all the participants to the plenary meeting. He emphasized the platform's importance, aiming to break the space community's bubble and focus on understanding user needs. He explained that the user consultation platform, in its fifth iteration, has evolved over the years, expanding from a navigation-centric approach to including Earth observation, telecommunications, and space surveillance.

He stressed the goal to create synergies among different space program components to address diverse user needs effectively. He elaborated on the various platform's sessions covering diverse market segments, including environment, forestry, resilience, agriculture, roads, rail, and public transport. Rodrigo Da Costa also highlighted the unique approach of the platform, which is not a traditional conference but a space for listening to users' voices.

He explained that the 2023 session had dedicated sessions for space surveillance and tracking, along with discussions on new market segments like environment and forestry. He also explained that the platform serves the mission of EUSPA being an exploiter in charge of program security and market uptake. Rodrigo Da Costa finally expressed anticipation for the outcomes of the user discussions, emphasizing the significance of engaging with both traditional and non-traditional stakeholders in the space sector.

Overview of the UCP

Carmen Aguilera thanked Rodrigo Da Costa and went on to give an overview of the UCP. She explained that the user consultation platform, that started with Galileo, aims to discover user needs collaboratively with interactions with end-users. It evolved from focusing solely on navigation in 2017 to encompassing Earth observation, secure connectivity, and SST.

She insisted that the UCP is a user-centric event, with this year more than seven hours of discussions with users in eight rooms. Topics expanded to include climate risk assessment, business opportunities from ESG reporting, and new applications in resilient societies. The transport sessions highlighted the importance of assessing climate risk impact and the need for secure communication in remote areas.

She explained that the results of the UCP are published in fine details in reports that are made largely available. Past discussions on Copernicus and Galileo revealed the platform's impact on real world use cases. Examples include the evolution of EGNOS for rotorcraft operations, enhancing Galileo's

search and rescue service based on its return link, and using Copernicus for drone safety assessment. User input led to service improvements and solutions that address emerging challenges, which shows the positive impact of the UCP.

Carmen Aguilera then went on describing the main outcomes of the UCP. The 2023 session covered new market segments like forestry, environment, SST and resilient societies. Common trends to all segments included the focus on climate risk assessment, ESG reporting and the growing relevance of secure communication in remote areas. The resilient societies segment also explored new applications such as customs operations and the protection of cultural heritage. The transport sessions revealed varied needs, such as a focus on automation and the need of EGNOS-enhanced services and specific requirements for integrity. Space users introduced requirements for GNSS accuracy, precise orbit determination, radio occultation, and the need for satcom to support satellite communication. SST discussions led to improved services and considerations for commercialization.

Carmen Aguilera concluded by starting the discussion with pannellists and welcomed their feedback.

Discussion with the panel: Laura Moreno

The panel discussion started with Laura Moreno, CEO of Earthpulse, on the outcome of the environmental, climate and biodiversity session.

Laura Moreno, thanked for the opportunity to participate in the event organized by EUSPA. She emphasized the value of these gatherings for networking and insights within the community. Earthpulse specializes in satellite data analytics, focusing on climate risk assessment and vulnerabilities.

Key takeaways from the environmental session included recurring requests from data providers for more data and increased frequency. The discussion highlighted the need for regulations, especially in Service Level Agreement (SLA) contracts, to ensure clear expectations for data delivery to the final users.

From the data provider perspective, the challenge of integrating Copernicus services into operational value chains was highlighted. Despite the immense value of Copernicus services, the diverse possibilities posed difficulties in seamless integration. On the other hand, users expressed concerns about data overload and the complexity arising from a lack of unique access points.

In climate-related discussions, users stressed the difficulty in understanding the fragmentation in the segment. They highlighted the need for more unified access points to navigate the vast amount of available data. Moreover, users voiced the challenge of dealing with a variety of climate indicators and models without clear standardization, adding complexity to their operations. The variety and diversity of climate indicators is also an issue.

These insights provide valuable feedback for the environmental session, emphasizing the need for regulatory clarity, addressing data overload concerns, and streamlining the integration of climate services into operational value chains.

Carmen Aguilera concluded by highlighting the very interactive nature of this UCP session and then passed the floor on to Adam Smialek, representing the space and the SST session.

Discussion with the panel: Adam Smialek

Adam Smialek, representing Iceye, a company utilizing pioneer radar technology, thanked Carmen Aguilera for the opportunity to provide feedback to UCP. With over 20 satellites, Iceye has a crucial need for robust collision avoidance procedures and reliable assisted services. He acknowledged the integration of SST in their operations and appreciated the chance to influence its development path.

Adam Smialek emphasized their company's commitment to ensuring safety in Earth's orbit, not only for their satellites but also for the overall safety of future space missions. He expressed concerns about navigating through the swarm of Starlink satellites in low Earth orbit, highlighting the importance of discussing safety in this context.

He welcomed again the opportunity to address Iceye concerns and underscored the necessity for SST services to address safety needs in low Earth orbit.

Carmen Aguilera concluded by stressing that Space was the most crowded session and passed the floor to Michael Doherty representing the resilient societies session.

Discussion with the panel: Michael Doherty

Michael Doherty represents Pen-CP, a Horizon Europe project focused on customs operations, particularly in data management and detection technologies for customs operations. His goal at the UCP is twofold: to learn about developments in space technology applications for customs operations and border management, and to inform the space community about customs operations, their requirements, challenges, and the opportunities digitalization presents.

During the panel discussion, Michael Doherty noted a diverse group with active participation, providing updates on ongoing projects and discussing requirements, emphasizing the need for secure communication systems. He highlighted the potential contributions of the space community in improving EU security through monitoring, surveillance, communication services, and early warnings of threats, especially in customs operations.

Michael Doherty concluded with emphasizing the importance of a secure and resilient satellite communication application for real-time asset tracking capabilities and providing high confidence levels in surveillance surveys, particularly at EU borders, ports, and remote land border areas.

After thanking him, Carmen Aguilera went on with Valentin Alfaya representing the public transport session.

Discussion with the panel: Valentin Alfaya

Valentin Alfaya, of Ferrovial is representing the public transport segment and he started by stating that the climate impact is a major concern for transport operators.

Valentin Alfaya described his positive experience at the event, initially focused on assessing climate impacts in the company's assets and projects. He highlighted the business case for developing a platform to make informed decisions and improve infrastructure resilience. The event served as a learning experience, revealing additional opportunities with space data and Copernicus beyond the initial scope.

Valentin Alfaya appreciated the increasing relevance of Copernicus products and services, emphasizing the need to bridge the gap between technology and end-users such him. He was happy for the opportunity to interact with Copernicus infrastructure officials, service providers, and end-users. As an end-user, he saw this as a valuable chance to enhance efficiency in decision-making by sharing his needs with the providers of services and products.

His overall sentiment was very positive, reflecting on the learning experience, the growing importance of Copernicus, and the opportunity to contribute to the more efficient use of space data in decision-making processes.

Carmen Aguilera thanked him and noted that person for some segments keep coming year after year, demonstrating the benefits of the event. She asked Georg Larscheid, representing the agriculture and forestry session, to comment on this point.

Discussion with the panel: Georg Larscheid

Georg Larscheid, from Class, started by thanking Carmen Aguilera for the invitation to the UCP event. He emphasized the importance of translating possibilities into value for the end customer and the market within his digital business role.

Two key learnings from the event stood out for him. Firstly, the acknowledgment and appreciation of the inclusion of the Secure Satcom pillar in the EU space program, emphasizing its critical role in agriculture and forestry, especially in remote areas with unreliable mobile phone coverage. The secure communication is deemed mission-critical for the operation of machines.

Secondly, he highlighted the significance of high-accuracy services from Galileo for agriculture and forestry applications, emphasizing the need for centimeter-level accuracy for various tasks. He expressed the hope that advancements in this area will boost the adoption rates of technology in these sectors.

Finally, Georg Larscheid appreciated the diverse exchange in the sessions, particularly noting the involvement of end users, such as forestry owners, in the discussions. He suggested expanding this model to the agricultural sector by including end users, suppliers, and startups for a more comprehensive and valuable mix in future sessions.

Overall, he appreciated the session for its informative and diverse discussions.

Carmen Aguilera then gave the floor to Anna Luz representing the road and automotive segment.

Discussion with the panel: Ana Luz

Ana Luz from the Seville unit in direction General de Trafico explained why she keeps coming to the UCP: she highlighted the valuable opportunity for learning, sharing, and collaboration in the road and automotive sector. She drew three main conclusions from the working session:

First, the maturity of GNSS applications in the road sector is evident, though some gaps exist, emphasizing the need to focus on technology adoption.

Second conclusion is the exploration of new applications from Galileo, EGNOS, higher accuracy services, OSNMA, and IRIS2, with a particular emphasis on secure communications for connected and automated vehicles.

Third, the overview of applications of Copernicus earth observation has been comprehensive, showcasing diverse applications in the road sector. Examples include site selection and monitoring for maintenance issues but also for traffic management and emergency responses, as illustrated by a case during a volcano event in the Canary Islands in September 2021 where Copernicus helped to manage an unusual traffic situation.

Ana Luz underscored the usefulness of the European space program products for the road and automotive sector, emphasizing a promising future through collaboration and meeting the specific needs of users.

After thanking her, Carmen Aguilera passed the floor to Valentin Barreau representing the rail session

Discussion with the panel: Valentin Barreau

Valentin Barreau is head of SNCF localization team and has been involved in the UCP rail session for several years.

Valentin Barreau thanked for the invitation, emphasizing his personal pleasure as a person working in the rail sector but with a background in the space. He highlighted the increasing use of space services based on Copernicus, specifically at SNCF but also with other rail operators. Applications include such as vegetation monitoring along tracks and soil moisture detection to prevent landslides. However, in this use case, there are still performance limitations that were discussed during the session.

The second topic of interest for Valentin Barreau is IRIS2, a service that could bring significant benefits to railways by providing a secured communication link between trackside and onboard systems. Currently, the telecommunication norms like GSMR and FRMCS require costly base stations, ranging from 50 to 100K Euros per kilometre of track. IRIS2 has the potential to reduce or eliminate these costs, making it more feasible to maintain trains in low-density areas, where profitability is a challenge due to fewer passengers. Valentin Barreau expressed anticipation for the future implementation of this service.

After thanking him, Carmen Aguilera explained that the main topic of the conference was sustainable innovation for the resilient Europe. She asked the panellists for their main needs from the European Space System in this regard.

Discussion with the panel: Laura Moreno

Laura Moreno emphasized the crucial role of Copernicus data for enterprises, particularly in environmental services and monitoring, highlighting its unparalleled reliability. The key challenge discussed was the need of integration of Copernicus services into the value chain, emphasizing the importance of building a bridge for effective reporting and making indicators. She also suggested, in a similar fashion to the EUSPA market reports, to produce reports capturing the various use cases and their benefits, creating awareness and enhancing the sales process in various verticals.

Carmen Aguilera then gave the floor to Georg Larscheid.

Discussion with the panel: Georg Larscheid

Georg Larscheid explained the pressure on the agricultural sector to reduce mineral fertilizer application, particularly nitrogen, due to stringent limits imposed on farmers. Copernicus data is currently used to assess crop vigor and stress, identifying potential nutrient insufficiencies. This allows for targeted fertilizer distribution, minimizing environmental impact and pollution in groundwater. The speaker noted that approximately 15 to 20% of EU farmland employs this technology, discussing the need for mainstreaming and exploring both technical and non-technical requirements to increase adoption.

After thanking him, Carmen Aguilera gave the floor to Valentin Alfaya.

Discussion with the panel: Valentin Alfaya

Valentin Alfaya emphasizes the importance of resilience in transport infrastructures, particularly roads, and highlights their experience in integrating Copernicus products and space data to enhance infrastructure resilience. This integration is a competitive advantage, offering more resilient critical infrastructures to government and public institutions. With climate change impacts looming, the focus on improving resilience of critical infrastructures across various industries is crucial. The speaker noted the importance of Copernicus and space data, especially in addressing society's goals related to biodiversity and ecosystem services. He concluded by insisting on the need to make Copernicus more user-friendly and accessible to end-users, emphasizing the need to bridge the gap between providers and users for more informed and efficient decision-making.

Carmen Aguilera then gave the floor to Valentin Barreau.

Discussion with the panel: Valentin Barreau

Valentin Barreau first stated that the rail sector was already very much sustainable. He then expressed the need for improvement in the railway system and the potential benefits of a more digitalized system, including increased capacity and the ability to accommodate more trains on the tracks. He highlighted the importance of on-board safe localization systems to achieve these goals. Shifting from a trackside-based detection system to an on-board localization system is proposed, to reduce the number of balises required along the tracks and align with future railway system needs, such as moving blocks, autonomous train functionalities and advanced traffic management systems.

Valentin Barreau indicated that a safer and more accurate localization system was required. He emphasized the collaboration with ESA and EUSPA to develop an EGNOS service for rail, specifically for safe localization solutions. The ongoing project involves testing the solutions and ensuring they meet operational requirements. Strong milestones are set, including a signals test bed by early 2025, aiming for operational solutions on tracks and trains by the beginning of the next decade.

Carmen Aguilera then passed the floor to Adam Smialek.

Discussion with the panel: Adam Smialek

Adam Smialek explained that the space session primarily focused on sustaining industry development, particularly addressing the evolving GNSS requirements. Notably, stringent requirements for Radio Occultation missions, presented by EUMETSAT, emphasized the need for GNSS precise orbits in Low Earth Orbit with an accuracy below 2 centimeters.

SES presented findings on GNSS usage in Geo satellites, showcasing measurements achieved during geotransfer for orbits and station-keeping manoeuvres, ranging from 25 to 50 meters and 20 to 40 meters, respectively. This demonstrated the successful meeting of requirements set three years ago.

The session highlighted also the significance of GNSS in lunar exploration missions, offering new business opportunities, with varying performance expectations based on specific applications. For instance, lunar orbiter requirements differ from those for astronauts on the lunar surface, where accuracy above 100 meters is anticipated.

Additionally, discussions addressed the growing importance of cybersecurity applications in space and the evolution of SST (Space Situational Awareness) services. The SST session aimed at exchanging views with the users on the approach of the EUSST to the basic and advanced services and the creation of the marketplace, with the basic services, designed for the safety of the space operations, being free of charge.

The discussion revolved around distinguishing between basic and advanced Space Situational Awareness (SSA) services. Basic services, crucial for day-to-day operations, were emphasized as essential for everyone and should be accessible to all users, promoting shared responsibility for Earth orbit safety. Operators stressed the need to enhance basic services, focusing on improved data quality and better support for collision avoidance maneuvers.

On the other hand, advanced services, including in-orbit contingency support, active debris removal support, and radio frequency interference, were deemed more specialized and tailored to specific user groups. The consensus highlighted the role of the EUSST as a catalyst for advanced SST services, with the EUSST marketplace facilitating access to these services, fostering their development, and ensuring robustness and quality.

Carmen Aguilera then passed the floor to Ana Luz.

Discussion with the panel: Ana Luz

Ana Luz highlighted the crucial role of space applications, such as eCall, in enhancing road safety and saving lives through the Golden Hour concept. The key here is timely medical assistance after a road crash for increased chances of survival. A new initiative, focused on creating the next generation of eCall, has been launched, targeting special users like hazardous goods vehicles and motorcycles to enhance communication technology. Additionally, the space sector is seen as a key contributor to the resilience of transport systems by supporting connected and automated vehicles through precise positioning and secure communications. This approach aims to achieve a more efficient and safer transport system.

Conclusion: Carmen Aguilera

As a conclusion Carmen Aguilera thanked again all panellists for their participation and for sharing the conclusions. She explained that the set of requirements for GNSS, Copernicus and Satcom was collected and that the next UCP will present how these requirements have been used to improve the services and data.

Carmen Aguilera thanked again all participants, which represented around 1000 people that were connected to the various sessions, contributing to shape the user requirements from the European space user community and expected to meet again this community for the UCP 2024.

Replay is available on Youtube:

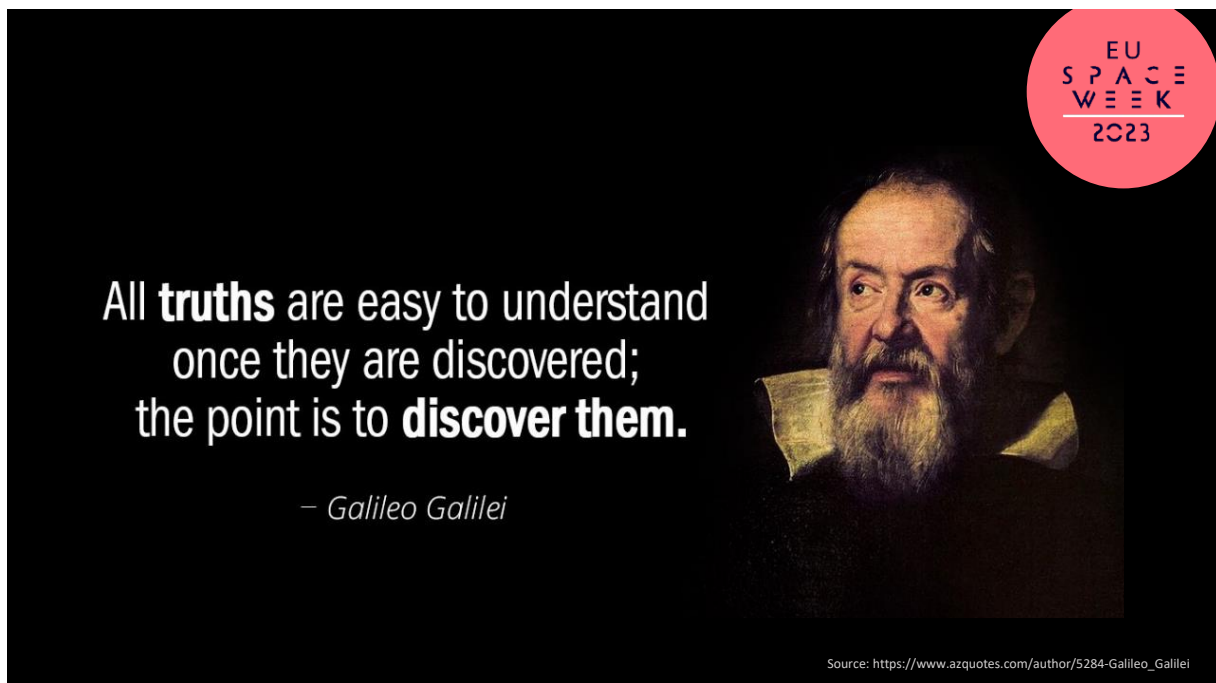
https://www.youtube.com/watch?v=ljM4Zy53oi4&t=1637s&ab_channel=EUSPA-EUAgencyfortheSpaceProgramme

2 ANNEX: SUPPORT PRESENTATION FROM CARMEN AGUILERA

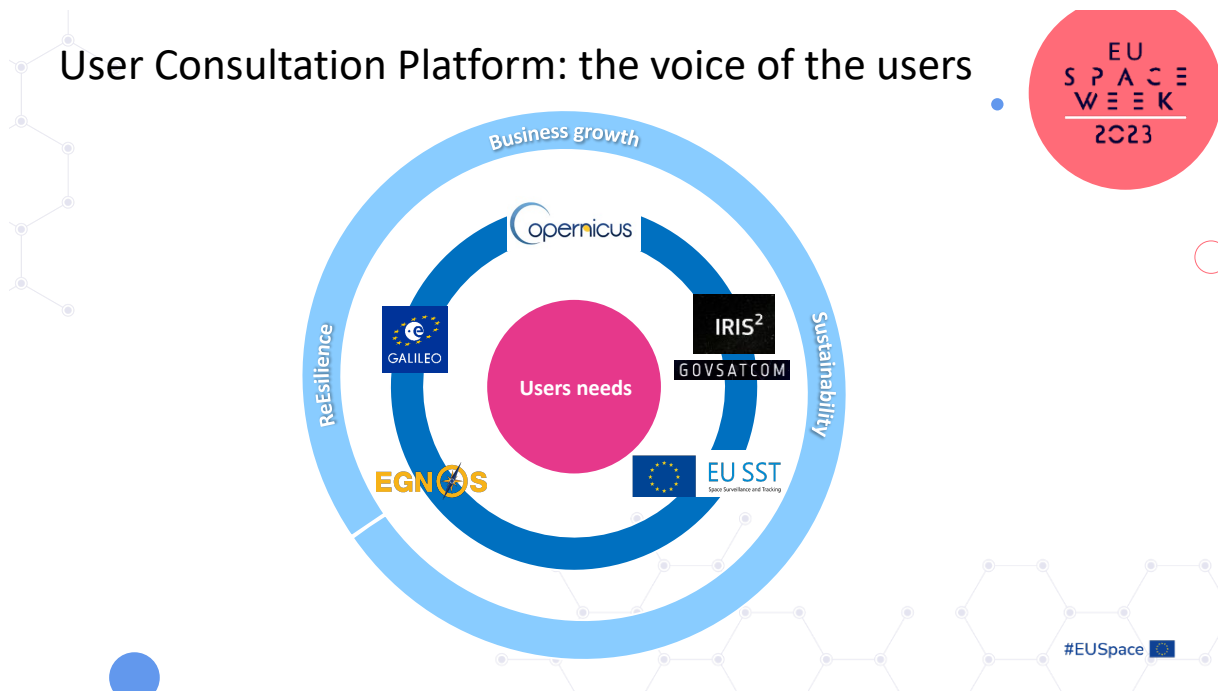


EU Space for Users:
User Consultation Platform Plenary

Carmen Aguilera, Operational Market Development Manager, EUSPA
8th November 2023



User Consultation Platform: the voice of the users



The User Consultation Platform 2023: needs for all space components for the first time



Needs and requirements from UCP are documented as inputs to the programme



The URS document includes the following sections:

- 6.1 Synthesis of Requirements relevant to GNSS

Req. ID	Req. Description	Priority	Impact	Source
URS-001
URS-002
- 6.2 Synthesis of Requirements relevant to LEO

Req. ID	Req. Description	Priority	Impact	Source
URS-003
URS-004
- 6.3 Synthesis of Requirements relevant to Earth Observation

Req. ID	Req. Description	Priority	Impact	Source
URS-005
URS-006

Implemented users needs from UCP: examples



EGNOS for non ATS environments

UCP 2017

EGNOS Safety of Life (SoL) Service Definition Document
Oct 2018

Galileo Remote beacon activation

UCPs 2017-2020

ED-277, Feb 2021

Copernicus for drone Safety case

UCPs 2020-2022

Pilot 2022-2023

User Consultation Platform 2023 8 sessions, 10 market segments

EU
SPACE
WEEK
2023



UCP 2023 Highlights Agriculture & Forestry, Environment, Resilient Societies

EU
SPACE
WEEK
2023



- **Trends:** Food security, digitalization, sustainability and climate change
- **Regulation compliance:** CAP, EU green Deal, EUDR
- All **GNSS** applications (machinery guidance or automation, livestock) require sub-meter accuracy
- **EO:** need for scalable approaches for forest management



- **Trends:** climate informed decision making, ESG reporting
- **Regulation:** Green Deal, Corporate Sustainability Reporting Directive, EUDR
- **Location** of assets facing a climate risk, GNSS for supply chain traceability
- **EO:** more granular flora and biodiversity mapping, near real time, standardised products tailored to vertical segment.



- **Trends:** digital transformation of customs, Unexploded Ordnance (UXO) and cultural heritage
- Customs -> **authentication**, m-level.
- **EO** supports cultural heritage, m accuracy
- UXO -> **Satcom** and accuracy better than 10cm

UCP 2023 Highlights Automotive, Rail and Public Transport

EU
SPACE
WEEK
2023



- **Trends:** Adapting to Climate change, Cooperative, connected & automated mobility, urban mobility
- **GNSS:** Integrity, dm accuracy, authentication, high availability for automated vehicles
- **EO** for sustainable infrastructure planning/management, tailored offer
- **Satcom** for seamless connected mobility



- **Trends:** Green Deal and ERTMS.
- **EGNOS service** rail demonstrator for ERTMS by 2025
- **Copernicus** to support infrastructure optimisation
- **Satcom** for Future Rail Mobile Communication system



- **Trends: Green Deal,** Autonomous shuttles & on demand public transport,
- **Meter** accuracy and high availability in urban areas.
- **EO for infrastructure** maintenance

UCP 2023 Highlights Space and SST users

EU
SPACE
WEEK
2023



- **Trends:** New space is driving the market (mega constellations, reusable launchers, extra orbital activities) with reduced costs and the increased use of GNSS
- **GNSS Needs** vary: cm position, sub ns time accuracy for LEO radio occultation, 10m accuracy for GEO and MEO telecom satellites
- **Secure satcom** supporting safety and security of space infrastructure.



- **Basic/public services:** additional routine screening, analysis of primary asset information, enhancement of EU SST conjunction analysis
- **Advanced/commercial services:** enhanced manoeuvres support and active debris removal
- Different points of view on **marketplace**.
- **EU SST as public catalyst** for the EU industry
- Results will be shared within the **EU Industry and Start-Ups Forum on STM (EISF)**



The floor is yours



Georg Larscheid
Vice President Digital Business
CLASS



Laura Moreno
Co-founder and CEO
EarthPulse



Ana Luz
Provincial Head of Traffic
General Directorate



Valentín Alfaya
Sustainability Director
Ferrovial



Valentin Barreau
Head of SNCF Localisation
SNCF



Adam Śmiłek
Space System Engineer
ICEYE



Michael Doherty
Technology expert
CBRA



Agriculture & Forestry



Environment



Road and Automotive



Public Transport



Rail



Space



SST



Resilient societies

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