



**21-23 May 2025**  
Centennial Hall, Wrocław  
Poland



# European Navigation Conference 2025

## Plenary Program (tentative)

### *Day 1 – Wednesday 21 May 2025*

**Janusz Uriasz:** Welcome to Wrocław by PNF

**Terry Moore:** Introduction by EUGIN

**Rafał Borek:** Overview of Polish Space Agency activities

**Javier Benedicto:** ESA shaping the Future of Navigation

**Kristian Svartveit:** Jammertest, the largest open GNSS jamming and spoofing test in the world

**Baochen Zhang:** BEIDOU Navigation Satellite System and its Applications

**Adam Weintritt:** e-Navigation versus Autonomous, the challenge for pilots

**Predrag Vranjkovic:** The European CNS Minimum network and Evolution plan

**Gary McGraw:** International Cooperation for Resilient GNSS and PNT applications

### *Day 2 – Thursday 22 May 2025*

**Panel 1:** Future Trends in Navigation

(moderators: Stefano Binda and Paride Testani)

**Ramsey Faragher:** Resilient PNT Best Practises

Jammertest Live Demo and Video

### *Day 3 – Friday 23 May 2025*

**Panel 2:** Low Earth Orbit PNT

(moderators: Edward Breeuwer and Thomas Janssen)

**EUSPA, the EU Agency for the Space Program:** Keynote Speech

**Terry Moore:** Summary and Conclusions

**Tomasz Hadas:** Awards Ceremony

**EUGIN:** Presentation of the Next ENC

**Bart Banning:** Closing Remarks





**Janusz Uriasz**  
President of the Polish  
Navigation Forum



**Professor Terry Moore**  
Chairman of EUGIN  
the European Group of  
Institutes of Navigation



**Professor Tomasz Hadas**  
Chairman of the ENC 2025  
Technical Program Committee



**Doctor Ramsey Faragher**  
Director of the UK Royal  
Institute of Navigation



**Professor Adam Weintrit**  
Rector of Gdynia  
Maritime University



**Doctor Gary McGraw**  
President of the USA  
Institute of Navigation



**Colonel Rafal Borek**  
Satellite Navigation Director  
of the Polish Space Agency



**Javier Benedicto**  
Director of Navigation at  
European Space Agency



**Kristian Svartveit**  
Senior Adviser at the  
Norwegian Space Agency



**Professor Baochen Zhang**  
Vice President of the China  
Institute of Navigation



**Predrag Vranjkovic**  
CNS Program Manager of  
EUROCONTROL



**Bart Banning**  
Co-Founder of the European  
Navigation Conference Foundation

[www.enc-series.org/2025/](http://www.enc-series.org/2025/)



Conference Partner  
**ESA the European  
Space Agency**

**The European Navigation Conference 2025** Is held in Wroclaw, Poland – a city over 1000 years old, with 21 islands and 28 universities. This technical and scientific conference around PNT and GNSS will take place in Centennial Hall, a UNESCO World Heritage site, in the year that Poland has the presidency of the European Union, and sends an astronaut to Space. The ENC is the leading conference that takes place in a different European country each year. It is organized under auspices of EUGIN, the European Group of Institutes of Navigation. Join us in Wrocław for ENC 2025. **Let navigation bring us together!**



Thursday  
22 May

# Panel session: **Future Trends in Navigation**



**Stefano Binda** ESA  
*Moderator*



**Paride Testani** ESA  
*Moderator*

This Panel focuses on exploring the future trends of navigation systems, technologies, products and services. The discussion will revolve around GNSS, including Galileo featuring new services like HAS and OS NMA - and GPS; those are systems delivering very high accuracy and availability, even though they are susceptible to accidental and intentional signal disturbances. They also have technical limitations such as indoors, and therefore the trends on augmentation systems will also be covered. The Panel will further address the main drivers for future trends and developments: technical, operational and institutional. In the discussion, new use cases such as navigation beyond Earth and related research opportunities will be considered.



**Daniele Borio**  
EC Joint Research  
Centre



**Irma Rodriguez**  
GMV



**Michael Meurer**  
German Aerospace  
Center



**Krzysztof Sośnica**  
Wrocław University  
of E&L Sciences





Friday  
23 May

# Panel session: **Low Earth Orbit PNT**



**Edward Breeuwer**  
ESA LEO PNT  
*Moderator*



**Thomas Janssen**  
Antwerp University  
*Moderator*

The Panel focuses on exploring the potential benefits of LEO PNT for the end users of GNSS systems, but will also consider potential additional receiver complexity. Benefits that LEO PNT may bring include improved resilience based on higher signal power, as well as frequency diversity to deal with interference and jamming. The geometry and dynamics of a LEO constellation may provide better PPP performance and improved visibility in urban and indoor applications. Introducing LEO satellites can provide challenges for receiver and chip manufactures such as higher Doppler variations and new signal modulation schemes. These are the experts!



**James Tidd**  
Swift Navigation



**Wim de Wilde**  
Septentrio



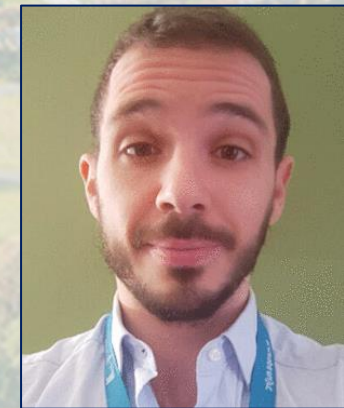
**Zahidul Bhuiyan**  
Finnish Geospatial  
Institute



**Trevor Landon**  
Iridium STL



**Wei Cao**  
John Deere



**Francesco Menzione**  
EC Joint Research  
Centre

[www.enc-series.org/2025/](http://www.enc-series.org/2025/)