

European Navigation Conferences and the RIN

A report on the 2023 European Navigation Conference and plans for ENC2024

By John Pottle, RIN Director



In this article I shall aim to provide a flavour of the very successful 2023 European Navigation Conference (ENC), share how the ENC is evolving (spoiler alert = quite a lot!) and, with that, how the RIN sees the ENC series going forwards as part of delivering its own objectives and impact.

The 2023 European Navigation Conference attracted over 300 participants and was, literally, a sell-out success. Why was this? Part of the success was the location – ENC2023 was held in the European Space Agency's ESTEC facility (European Space Research and Technology Centre). Many positioning and timing-related businesses in Europe will have active links to ESA and ESTEC, be they as customer, supplier or collaborator.

Part of the success was accessibility, in that ESTEC is easy to access and it's convenient (though generally blustery!) to stay in the one of the adjacent coastal towns. Thirdly, ENC2023 was run by a professional conference organiser (PCO) which



ESTEC Site Entrance ENC2023.
Photo courtesy of Jan Buteijn

helped to shape a positive delegate experience overall.

The ENC series is owned by the European Group of Institutes of Navigation (EUGIN). The RIN has always been active and a supporter of EUGIN.

Professor Terry Moore is the current chair, with Bart Banning, President of the Netherlands Institute of Navigation (NIN) serving as vice-chair. The NIN led the organisation of ENC2023, whose overall theme was resilient navigation (see www.enc2023.eu).

Martin Ujt de Haag, FRIN, presented the closing keynote and his conclusions included:

Significant strides are being made to deliver performance and resilience improvements to navigation systems (see box on the following page for examples of some key ENC2023 update areas);



Plenary Hall ENC2023.
Photo courtesy of Jan Buteijn

Several additional sensors are normally needed to deliver performance required of most applications;

There is no single combination of sensors that works across all use cases – mitigations need to be selected based on the user requirements definition and risk assessment;

The different sensors are very far from “plug and play” today – there are many good positioning, navigation and timing solutions available but it’s actually quite specialist and difficult to combine technologies into a single system;

Exploiting connectivity between users by cognition and collaboration represents an opportunity.

EUGIN has been discussing for some years now how to make the ENC series more consistent. A major challenge with the “old” approach is that moving a major conference from institute to institute each year results in each ENC being a different experience, and sometimes not a particularly strong or good one at that.

ENC2024 is shaping up to be the first of a new breed of ENC. The RIN has been strongly advocating a more collaborative approach with several institutes working together to deliver the ENC series. Another key element would be to use the same conference organiser (PCO) each year. Now seems like the perfect time to bring this to reality,



*Terry Moore as EUGIN Chair,
Opening ENC2023. Photo
courtesy of Jan Buteijn*



*Delegates at ENC2023.
Photo courtesy of Jan Buteijn*

with the opportunity to build on the successful 2023 series. As such, the RIN has offered to take the lead for ENC2024. Other Institutes are coming on board and ESA has, once again, confirmed that it is willing to host ENC2024 at ESTEC.

By the time you read this, initial announcements should have been made and RIN will be well underway on a RIN-first and a EUGIN-first, namely an ENC being offered by an institute in a European country other than the “lead” institute’s own country. We see this as the model for the future. The RIN’s ambition is to demonstrate that a collaborative approach can deliver a better, stronger, ENC series to benefit everyone. From the RIN’s own perspective, a stronger ENC enables RIN to do a better job of delivering its own Royal Charter objectives, allowing more communications and knowledge sharing between broader and more diverse participants. In fact, RIN is so committed to working to achieve this vision this is the reason that the RIN plans to rely on the ENC series going forwards to deliver multi-day peer-reviewed conferences.

Please join RIN and EUGIN - ENC2024
21-24 May 2024, ESTEC, Netherlands

www.enc-series.org
Going live soon!



PNT Developments Covered at ENC2023 included...

- ▶ Global Navigation Satellite Systems (GNSS) including PPP, RTK, space and ground-based augmentation systems
- ▶ Inertial navigation, in particular advances in MEMS sensors
- ▶ Quantum navigation (in particular cold atom interferometry)
- ▶ Terrestrial navigation
- ▶ Magnetic-field based navigation
- ▶ Vision and laser-based navigation
- ▶ Context-aware navigation
- ▶ Non-navigation radio signals that can provide position or time, including LTE, 5G, LEO communications satellites)
- ▶ AI-based navigation
- ▶ LEO PNT
- ... and many more