



ICAO



## ICAO EUR/MID Radio Navigation Symposium

6-8 February 2024

Antalya, Türkiye

### Work Programme

(v.4 - 07/02/2024)



***Towards Safe, Reliable and Resilient Air Navigation***

**DAY 1, 6 February 2024**

08 :00 – 09 :00

[Registration](#)

09:00 – 09:45

[Session 1.1: Opening Ceremony](#)

Master of Ceremony:

Abbas Niknejad, ANS Regional Officer, ICAO EUR/NAT

Speakers:

- *Dr. Cengiz PAŞAOĞLU (Deputy Director General & Member of the Board, DHMI Turkiye)*
- *Loftur Jonasson (Chief CNS & Spectrum, ICAO HQ)*

09:45 – 10:30

[Session 1.2: Setting the Scene: Global Developments](#)

The session will address ICAO provisions related to the Radio Navigation and provide update on related global and regional developments.

- *WRC-23 Outcome (Loftur Jonasson, ICAO HQ)*
- *ICAO Provisions on Radio Navigation & Navigation Systems Panel activities (Ken Alexander, FAA)*

10:30 – 11:00

[Coffee Break & Group Photo](#)

11:00 – 12:30

[Session 2: Regional Developments and Plans](#)

The session will present the EUR (EU, ECAC) and MID Regional developments, plans and strategies concerning conventional and emerging radio navigation aids evolution. The rationalisation of conventional Navigation aids and minimum operating network and related challenges will be addressed.

Speakers:

- *EU Transition to PBN in SES (Raul Sanchez, EASA)*
- *EUROCONTROL Perspective on Navigation Capability Evolution (Gerhard Berz, EUROCONTROL)*
- *Navigation Implementation Issues (Muna Alnadaf, ICAO)*
- *Rationalisation of Conventional NAV Aids (Massmiliano Ferla, Thales)*

Moderator: Marc Troller



12:30 – 13:30

[Lunch Break](#)

13:30 – 15:00

[Session 3: States and Users Perspective on GNSS](#)

The Session will discuss latest developments and plans of States in the implementation of emerging NAV systems and will also discuss Users/Stakeholders perspectives on those developments.

*Speakers:*

- *Switzerland NAV/GNSS strategy and PBN transition (Marc Troller, Switzerland)*
- *France PBN implementation return of experience (Benoit Roturier, France)*
- *Users Requirements for ATS (Jehad Faqir, IATA)*

Moderator: Hamdi Nasser

15:00

[End of Day 1](#)

**DAY 2, 7 February 2024**

09:00 – 09:45

Session 4: Update on GNSS constellations

The Panel will discuss latest developments of some GNSS constellations (GPS and Galileo)

*Speakers:*

- *GPS Update (Ken Alexander, FAA)*
- *Galileo Update (Christopher Neville, EUSPA)*

Moderator: Loftur Jonasson

09:45 – 10:30

Session 5: Space Based Augmentation System (SBAS)

Presentations on latest developments of Europe's space-based augmentation system (EGNOS), its services, benefits, and functionalities.

*Speakers:*

- *EGNOS Developments (Christopher Neville, EUSPA)*
- *SBAS/LPV & PBN MAP Tool (Hamdi Nasser, EUROCONTROL)*

Moderator: Abbas Niknejad

10:30 – 11:00

Coffee Break

11:00 – 12:30

Session 6: GBAS and ABAS Developments and Implementation

The Panel will discuss the implementation requirements of ABAS, GBAS, benefits, types, siting considerations and frequency interference issues

*Speakers:*

- *ABAS/ARAIM (Gerhard Berz, EUROCONTROL)*
- *GBAS Implementation in Germany (Morten Grandt, Oliver Reitenbach, Germany)*
- *GBAS Implementation in Qatar (Mansoor Alam, Qatar)*

Moderator: Ken Alexander

12:30 – 13:30

Lunch Break



13:30 – 15:30

Session 7: The Operational impact of GNSS RFI

The session will present analysis of GNSS jamming and spoofing incidents occurred in Europe and Middle East Regions and discuss their impact on operation from different stakeholders' perspectives.

*Speakers:*

- *GPS Outages and its operational impacts in Turkiye (Ufuk ŞAN, DHMI Turkiye)*
- *GNSS Interference in MENA (Jehad Faqir, IATA)*
- *Qatar Airways experience of GNSS RFI (Mouna Bouassida Bouricha, Qatar Airways)*
- *GNSS interference: A Pilot's Perspective (Niklas Ahrens, IFALPA)*

Moderator: Radhouan Aissaoui

15:30

End of Day 2

**DAY 3, 8 February 2024**

09:00 – 11:00

[Session 8.1: GNSS RFI mitigation measures](#)

The session will cover the different sources of intentional and unintentional GNSS interference and possible mitigation measures to reduce the likelihood and impact of the GNSS interference as well as GNSS interference monitoring and reporting. Best practices on Civil-military coordination regarding managing GNSS interference will be presented.

*Speakers:*

- *GNSS RFI sources, mitigation measures and navigation monitoring (Hamdi Nasser, EUROCONTROL)*
- *Use of ADS-B to detect GNSS interference (Matthias Schaefer, Sero Systems)*
- *GBAS as a tool in detection of GNSS RFI (Oleg Zavalishin, NPPF Spectr)*
- *Resilient PNT & RFI Monitoring (Massimiliano Ferla, Thales)*
- *Mode N: Digital Solution for Sustainable CNS (Morten Grandt, Franz Madritsch, Germany)*
- *Preventive mechanisms: DME/DME application in Turkiye (Ufuk ŞAN, DHMI Turkiye)*

Moderator: Muna Alnadaf

11:00 – 11 :30

[Coffee Break](#)

11:30 – 12:15

[Session 8.2: GNSS RFI Solutions – Panel Discussion](#)

The Panel will explore how a complementary multi-sensor navigation system can help overcome GNSS resilience challenges and discuss the evolution of resilient PNT. Furthermore, for the short term, possible RFI operational mitigation measures and way forward will be discussed.

*Panelists:*

- *Ken Alexander, FAA*
- *Gerhard Berz, EUROCONTROL*
- *Franz Madritsch, Germany*

Moderator: Benoit Roturier



12:15 – 13:00

Session 9: Radio Navigation AIDs Flight Inspection

The Session will address ICAO provisions and USOAP requirements related to Radio Navigation Flight inspection. Moreover, it will discuss challenges related to flight inspection and emerging solutions.

*Speakers:*

- *Flight inspection challenges and developments (Gerhard Berz, EUROCONTROL)*
- *UAV Solutions for NavAids Flight Inspection (Ali Bagherian, Iran)*
- *Flight Inspection in 2024: the need for efficiency (Fabrizio MARACICH, Italy)*

Moderator: Muna Alnadaf

13:00 – 14:00

Lunch Break

14:00 – 15:00

Session 10: IFP Validation

This session will discuss ICAO provisions on the instrument flight procedure validation, including USOAP CMA related protocol questions (PQs). In addition, new technologies and methods for the conduct of IFP validation will be presented.

*Speakers:*

- *Smart IFP Validation (Pieter-Bas Oorman, PVS)*
- *ICAO USOAP PQs (Radhouan Aissaoui, ICAO)*
- *Educating on flight validation (Fabrizio MARACICH, Italy)*
- *Use of Simulator in IFP Validation (Reda Almadbouly, United ATS)*

Moderator: Abbas Niknejad

15:00 – 15:30

Session 11: Closing Ceremony*Speakers:*

- *Symposium wrap-up (Loftur Jonasson, Chief CNSS, ICAO)*
- *Closing (Orhan GÜLTEKİN, Director of Electronic Department, DHMI Turkiye)*

15:30

End of Day 3