

# Real-Time Working Group

André Hauschild

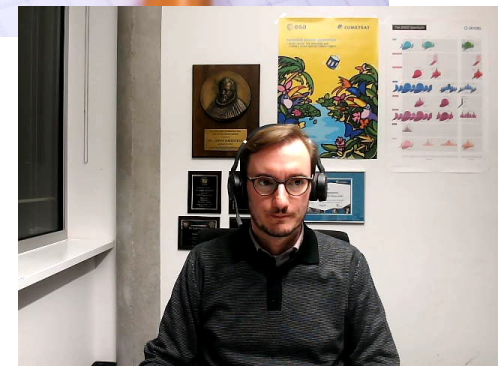
# Real-Time Service

Loukis Agrotis



# Outline

- Overview of Real-Time Working Group Charter
- IGS Workshop 2022
- Progress since IGS Workshop
- Appointment of New RT-WG Chair



# Overview of the Working Group Charter (1)

- Maintain and expand the multi-GNSS real-time reference station network of IGS stations
- Monitor and improve the quality of GNSS real-time observations and broadcast ephemerides
- Provide precise real-time corrections for orbits, clock, biases and atmospheric delays
- Provide and monitor combinations of correction data streams for IGS real-time products

For more information visit <https://igs.org/wg/real-time/#charter>



# Overview of the Working Group Charter (2)

- Develop new and improved RT products
- Work with the RT ACC to transition these products to the Real Time Service (RTS)
- Develop and improve open standards for real-time data and products
- Investigate new streaming technologies
- Provide access to reference station streams and correction streams through the internet

For more information visit <https://igs.org/wg/real-time/#charter>



# IGS Virtual Workshop

- Activities since Previous Workshop
- Scientific Use Cases of Real-Time Products
  1. Qi Liu (UPC) - **“The cooperative IGS RT-GIMs: a global and accurate estimation of the ionospheric electron content distribution in real-time”**
  2. Tomasz Hadas (UPWR) - **“Overview of real-time GNSS meteorology: ZTD accuracy, horizontal gradients, low-cost receivers”**
  3. Xinyuan Jiang (GFZ) - **“Real-Time GNSS processing for geohazard early warning: implementation in the EWRICA project”**
  4. Attila Komjathy (JPL) - **„Ionospheric Detection of the 2022 Tonga Event Using Real-Time GDGPS Observations“**
- Roadmap for Future IGS Real-Time Activities



# Recommendations from IGS Workshop

- Extend IGS-SSR format with new messages for GNSS satellite attitude and SRP(APC)/CoM offsets (1 year)
- Define an agreed format and broadcast the RMS map associated to the RT-VTEC product (3 years)
- Define a roadmap for future IGS real-time activities based on feedback from virtual workshop (by end of 2022)



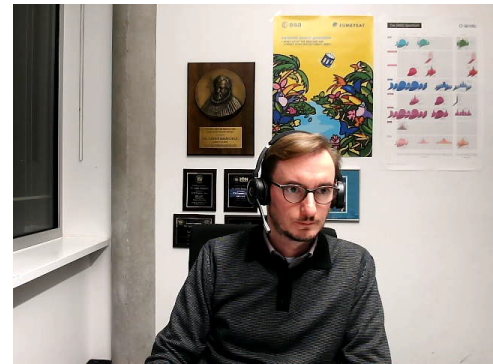
## Progress since IGS 2022 Virtual Workshop (June 2022)

- Follow-up telecon in Nov 2022 with discussion on roadmap
- Decided (and recommended) roadmap items
  - Extend IGS-SSR format with new messages for attitude and SRP(APC)/CoM offset (1 year)
  - Define an agreed format and broadcast the RMS map associated to the RT-VTEC product (3 years)
- Potential roadmap items for future activities
  - Extend IGS-SSR format with new messages for PCV/GDV (3 years)
  - Define an agreed format and broadcast a satellite-dependent slant TEC (potential indicators about Slant TEC or Vertical TEC, global VTEC or regional VTEC with sector identifier or spatial range and interval, might be considered) (3-5 years)
  - Multi-layer RT-VTEC
  - Phase biases for PPP-AR

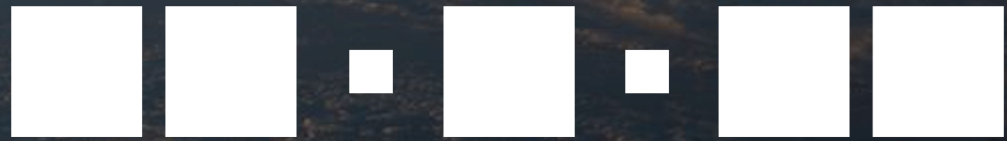


# Appointment of New RT-WG Chair

- André Hauschild stepping down from RT-WG chair position by end of 2022
  - Will stay member of working group and assist in transition
- Two candidates for chair and vice-chair (new!!) positions
  - Axel Rülke (BKG)
  - Ningbo Wang (CAS)
- Online vote for RT-WG members ongoing
  - Vote opened on Dec 7, 2022
  - Closes on Dec 21, 2022
- Voting results will be communicated after Dec 21







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**Thank You!**

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