

## 5<sup>th</sup> Expert Talk on Localization – Final Program

Thursday 06.06.2024 – Building 1-1.14

**08:30 - 09:30: Registration and Early Bird Coffee**

**09:30 - 09:45: Welcome**

**09:45 – 11:00: 1<sup>st</sup> Session – Localization**

Session chair: Hossein Shoushtari

- Evaluation of the Modular Design Structure for the UWB Single Anchor Localization System SALOS (Sven Ole Schmidt and Horst Hellbrück)
- On Weight Functions for Multipath-Assisted Radio Tomographic Imaging Algorithms (Marco Cimdins, Sven Ole Schmidt and Horst Hellbrück)
- On Options for the Design of Radio Frequency-based Positioning Systems (Marco Gunia and Frank Ellinger)

**11:00 - 11:30: Coffee break**

**11:30 - 12:45: 2<sup>nd</sup> Session – Applications of Localization**

Session chair: Marco Gunia

- Indoor Localization Using Commercially-off-the-Shelf-Available Gas Sensors (Marco Cimdins, Domenic Hampf, Sebastian Hauschild and Horst Hellbrück)
- 3D-OLE: Three-Dimensional Optical Pipeline Inspection (Georg Fjodorow, Hossein Shoushtari and Harald Sternberg)
- RSSI Indoor Localization System for Asset Management in Medical Facilities (Naglaa El Agroudy, Matthias Stege, Uwe Sommerlatt, Marco Gunia and Frank Ellinger)

**12:45 - 14:15: Lunch Break**

**14:15 - 15:30: 3<sup>rd</sup> Session – Supporting Technologies**

Session chair: Marco Cimdins

- Printed Super-Capatteries for Smart Energy Storage Systems (Tilo Meister, Koichi Ishida and Frank Ellinger)
- **Demo** - Printed Super-Capatteries for Smart Energy Storage Systems
- Design Considerations for a System-Integrated MUX and DMUX for High-Speed Data Communication (Lars Garraud, Marco Gunia and Frank Ellinger)

**15:30 - 17:30: Discussion/Break-out Sessions**

**18:30 - 20:30: Dinner**

Friday 07.06.2024 - Building 36-1.2/3

**09:15 - 10:00: Panel Discussion**

- Results from the breakout sessions

**10:00 - 11:00: 1<sup>st</sup> Session – Localization II**

Session chair: Sven Ole Schmidt

- An improved four-way ranging in phase-based ranging (Yan Wu)
- On Current trends in positioning (Marco Gunia and Frank Ellinger)

**11:00 - 11:30: Coffee break**

**11:30 - 12:45: 2<sup>nd</sup> Session – Applications of Localization II**

Session chair: Marco Gunia

- Passive Localization for Underwater Swarm Vehicles using a Low-cost Acoustic Modem (Yuehan Jiang and Bernd-Christian Renner)
- Sensor Fusion for Object Localization with ROS 2 (Jan-Philipp Schreiter and Horst Hellbrück)

- Enhancing Collaborative Robots with Single Camera Integration and AI image detection (Ole Hendrik Sellhorn and Horst Hellbrück)

**12:45 - 14:15: Lunch Break**

**14:15 - 15:15: 3<sup>rd</sup> Session – Supporting Technologies II**

Session chair: Marco Cimdins

- System Architecture and Hardware Interconnects for an Adaptable 77-81 GHz FMCW Radar (Maximilian Gottfried Becker, Naglaa El Agroudy, Marco Gunia and Frank Ellinger)
- On Reusable Software to Reducing Design Cycles for Positioning Sensors for Embedded Systems (Marco Gunia and Frank Ellinger)

**15:15 - 16:00: Wrap up**