# IW3 - GNSS Evolution Masterclass: Bridging Theory and Field Performance

Abstract:

This workshop offers a comprehensive exploration of GNSS technology, charting the evolution from single-band to advanced multi-band systems. Participants will gain insights into diverse GNSS applications such as real-time navigation, asset tracking, precision agriculture, surveying, and autonomous vehicles. The session covers essential antenna characteristics, GNSS performance metrics, and correction technologies like RTK, PPP-RTK, and Galileo HAS. Practical evaluation methods are discussed, with real-world measurement demonstrations comparing environments, antenna types, and the impact of correction services on accuracy and reliability. This workshop is suitable for those in academia and industry who wish to further their knowledge of GNSS technologies and GNSS antenna characteristics.

Workshop Outline:

1. Introduction
2. GNSS Evolution – journey from single-band to multi-band
3. GNSS Applications – overview of typical GNSS applications
4. GNSS Antenna Characteristics – key antenna parameters for GNSS
5. GNSS Performance Metrics – GNSS metrics used for evaluation of system performance
6. GNSS Correction Services – overview of correction services
7. Taoglas GNSS Evaluation – Taoglas GNSS evaluation techniques
8. Real-World Measurements Demonstration – real-world test setups and results
9. Q&A
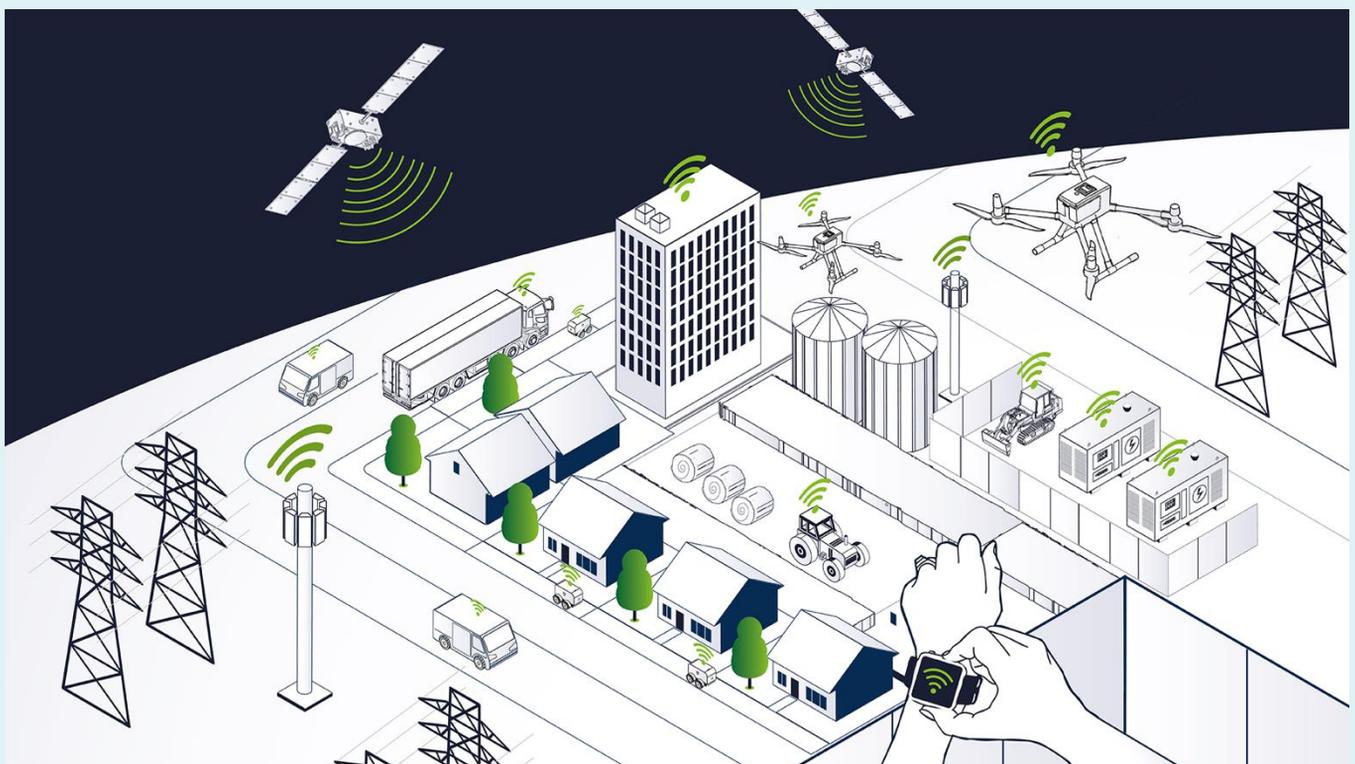
Instructor:

Lukas van Vuuren is a Senior Antenna Design Engineer at Taoglas, and specialises in GNSS antenna development and performance validation. His work includes rigorous lab testing, seamless integration into customer devices, and comprehensive field testing across diverse antenna setups and configurations. He is responsible for incorporating the latest GNSS receiver technologies into test environments as soon as they become available, ensuring solutions remain at the forefront of innovation. With hands-on experience bridging theory and real-world application, he is passionate about sharing practical insights and best practices to help engineers master the evolving challenges of GNSS performance.