6G-SANDBOX Showcases Next-Generation 6G Technologies at EuCNC & 6G Summit 2026

Málaga, Spain – 2–5 June 2026 – The 6G-SANDBOX project will participate in the EuCNC & 6G Summit 2026 for the fourth consecutive year, presenting experimental results and demonstrations that advance 6G system development and large-scale experimentation methodologies.

6G-SANDBOX Final Large-Scale Trial: Comparing Traditional and Open 5G Private Networks

The 6G-SANDBOX project invites conference participants to experience a live 5G private network deployed in the EuCNC exhibition space. Participants will be able to connect to the network, run experiments, and visualize live traffic, gaining hands-on insight into next-generation private network technologies. The trial uniquely features two complementary 5G private network deployments operating side by side:

- **A traditional vendor-integrated 5G private network**, delivering a production-ready, carrier-grade solution with commercial 5G radio access, an integrated 5G Core, and centralized management for secure and reliable enterprise connectivity.
- **An open, end-to-end O-RAN private network,** integrating open-source and third-party components to demonstrate interoperability, flexibility, and performance, supported by Keysight test solutions for visibility, analytics, and cloud-native UE emulation.

This side-by-side deployment enables a direct comparison between integrated and open 5G private networks, highlighting their respective strengths as building blocks toward future 5G and 6G systems.

6G-SANDBOX Demo Booth #65 (2 demos)

XR-Based Remote Demonstration: Immersive Teleportation to the 6G Innovation Lab

This demonstration presents an immersive XR experience that virtually teleports EuCNC attendees to a live 6G innovation laboratory in Málaga. Using XR headsets, up to five participants can simultaneously observe and interact with a real-time AI PHY demonstration running on an advanced development testbed supporting AI-based physical layer algorithm training under realistic RF conditions. Powered by Nokia immersive communication technology, the setup streams 360-degree video and bidirectional audio, with zoom-in capabilities to highlight instruments and system details. The demo illustrates both the capabilities of the AI PHY testbed and the role of future 6G networks in enabling low-latency immersive communication for distributed experimentation and collaboration.

Radio Tomography Imaging using Cameras and Sub-THz Radio Links

This demo showcases a sub-THz sensing system leveraging high-frequency wireless links for radio tomography imaging. It highlights how a single radio system can simultaneously enable communication and environmental sensing without requiring active scanning beyond regular data transmission.

The attenuation map generated as an object moves across the line-of-sight radio link is used to construct a radio image in the sub-THz domain. This approach is particularly relevant for future 6G systems, where efficient spectrum utilization is essential. The work demonstrates that continuous sub-THz radio links can effectively support practical high-frequency sensing applications. This demo is supported by the 6G Flagship and the Business Finland-funded 6GReMade project and is conducted in collaboration with Keysight, the University of Oulu, and Virginia Diodes Inc.

European Space Agency (ESA) and 6G-SANDBOX Demo

The 6G-SANDBOX project invites stakeholders and technology partners to experience a live demonstration of a 5G NR Non-Terrestrial Network (NTN) connection, deployed directly at the EuCNC exhibition site. The trial is carried out using a European Space Agency (ESA) mobile platform, where a van equipped with a portable antenna establishes a live link to a Low Earth Orbit (LEO) satellite.

Through this demonstration, participants will witness the end-to-end realization of a 5G NTN connection in a realistic and mobile setup. The system showcases how a terrestrial user terminal can successfully access 5G services via satellite, highlighting the feasibility of extending 5G coverage beyond traditional ground-based infrastructure.

Industrial Technology Research Institute and 6G-SANDBOX Demo - Demo Booth #69-74

ITRI has long been dedicated to the development of 6G NTN (Non-Terrestrial Network) technology. ITRI's 5G NR base station complies with 3GPP Rel. 17 and Rel. 18 enhancement standards, and has completed OTA (Over-the-Air) integration and verification with international partners including the ESA, MediaTek, Airbus, Eutelsat OneWeb, and Sharp. In this participation in the 6G SANDBOX NTN Trial field testing and verification activities, ITRI will integrate equipment from companies such as Hispasat GEO, Keysight, UMA, and NxgSAT, and will showcase its NTN base station solution at EuCNC & 6G Summit 2026.

University of Malaga - Demo Booth #122

The University of Malaga (UMA), in collaboration with nxgsat and Hispasat, and in the context of the 6G-SANDBOX project, will present a live demonstration of a 3GPP NTN Release 18-compliant 5G NR SDR User Equipment operating over a transparent GEO satellite payload. The demonstration uses the Hispasat 30W-6C satellite in Ku-band to establish full end-to-end connectivity between the UE and gNB under real satellite channel conditions. Visitors will be able to observe live traffic services both in the uplink and in the downlink over a GEO satellite link.

Workshops:

1. **Workshop 1: 6G Non-Terrestrial Networks: From Theory to Practice – Moving Towards In-Orbit 6G Experiments - Tuesday, 2 June 2026, 9:00–12:30, Room C2.1** This workshop brings together leading experts from industry, academia, and space agencies to discuss the latest advances in Non-Terrestrial Networks (NTN) and their role in future 6G systems. Co- organised by SNS JU Projects (6G-SANDBOX, UNITY-6G, ETHER, 5G-STARDUST, 5G EMERGE) along with other projects and organisations such ESA, the session reflects the increasing global momentum toward integrating satellite and terrestrial networks as part of unified 6G architecture

2. **Workshop 3: Rethinking Test, Measurement, and Validation for 6G Networks – Tuesday, 2 June 2026, 9:00–12:30, Room M1** Organized by our Project Coordinator Michael Dieudonne, this workshop addresses the growing complexity of testing, measurement, and validation (TMV) in 6G systems.
3. **Workshop 12: Advancing Network Digital Twins (NDTs) for AI-driven 6G systems - Tuesday, 2 June 2026, 14:00-17:30, room M4** This workshop is co-organized by SNS JU/Horizon Europe projects 6G-TWIN, 6G-SANDBOX, ACROSS, 6G-PATH, MARE, 6G-Cloud, 6G-FNS, ENVELOPE, FLECON-6G, 6G-DALI, SUNRISE-6G, UNITY-6G, INTACT and SECASSURED.

Special Sessions

1. **Special Session 5: Global 6G Testbed Collaboration for Open, Intelligent and Interoperable Innovation - Wednesday, 3 June 2026, 17:00-18:30, room Sala 2** – our Project Coordinator Michael Dieudonne, will participate in the panel discussion 'Global 6G Collaboration for Open, Intelligent, and Interoperable Innovation: NTN, AI-RAN and ISAC as Key Enablers for Integrated 6G Systems' representing our project.
2. **Special Session 7: Cascaded Funding in SNS Program – Accomplishments, Challenges, and Future Potential – Tuesday, 5 June 2026, Sala de Conferencias 2** - The session is co-organised by the 6G-SANDBOX, 6G-PATH, and FIDAL projects and chaired by Halid Hrasnica from Eurecom partner. It will discuss the impact of Cascade Funding and Financial Support for Third Parties (FSTP) within the SNS JU programme, highlighting achievements, challenges, and future opportunities.
3. **Special Session 9: Architecture Advancements towards 6G: Pre-Standardization, Key Technology Enablers, and Facing Challenges - Friday, 5 June 2026, 9:00-10:30, Sala de Conferencias 2 (2.2) -** 6G-SANDBOX and Anastasios Gavras contribute to the session 'Integration of Non-Terrestrial Networks in 6G: An Architecture Review'.

Conference Papers

1. An ORIGAMI Use-Case Validation via 6G-SANDBOX Experimentation – OPE-1 Wednesday, 3 June 2026, 8:30-10:00, room Sala 12
2. Beam Me There: Virtual Teleportation using XR over 6G – AIU-2 chaired by Jesús Gutiérrez, Wednesday, 3 June 2026, 17:00–18:30, Sala 6

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