

# NEWSLETTER #5

[CONVERGE-PROJECT.EU](https://converge-project.eu)

CONVERGE project has received funding under the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101094831, including top-up funding by UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee.

## 2026 EuCNC & 6G Summit – Málaga

The **CONVERGE** project will showcase its latest achievements at the **2026 EuCNC & 6G Summit 2026** in Málaga through an interactive demonstration entitled **“Digital Twins and XR for Real-Time 6G Experimentation and Control”**. Visitors are invited to discover how the convergence of wireless communications, sensing, computer vision, and extended reality (XR) can transform the way future 6G systems are designed, operated, and experimented.

**CONVERGE** is developing a unique toolset based on the vision of **“view-to-communicate and communicate-to-view”**, bringing together vision-enhanced radio systems, multimodal sensing, digital twins, and machine learning techniques.

**CONVERGE**  
view-to-communicate and communicate-to-view



Co-funded by  
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## Milestones & Highlights

- 2026 EuCNC & 6G Summit
- Completion of Partial Integrations
- ICASSP 2026 Grand Challenge
- ICASSP 2026 Show&Tell Demo
- ISAC Experimentation Webinar with OpenAirInterface
- Brooklyn 6G Summit Demo
- Seventh Meeting in Oulu

These technologies enable communication networks to become increasingly **context-aware and adaptive**, while supporting new capabilities in localization, sensing, and situational awareness. The developed tools are being deployed across **seven Research Infrastructures** aligned with the **ESFRI SLICES-RI** initiative, contributing to more advanced and interoperable experimentation facilities in Europe.

**EuCNC | 6G Summit**  
Málaga, Spain • 2-5 June 2026

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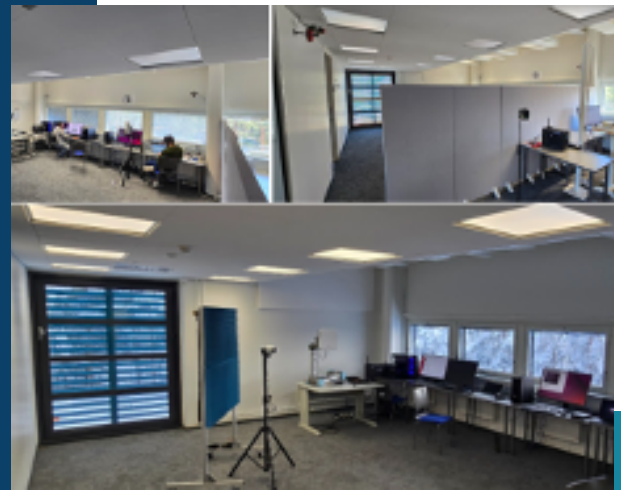
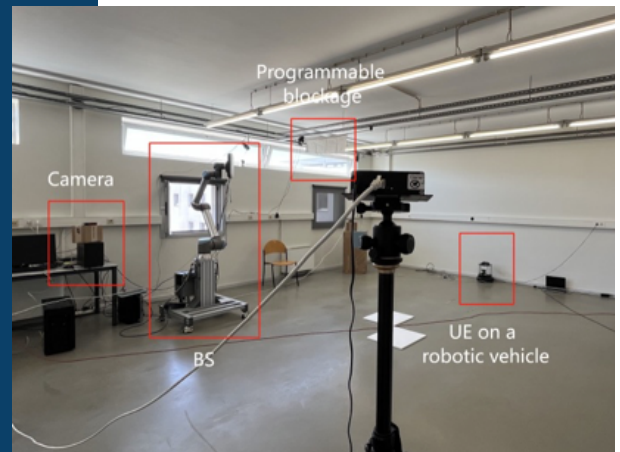


# Partial Toolset Integrations Successfully Completed

**CONVERGE** has reached an important milestone with the **successful completion of the partial toolset integrations** at the project sites in **Porto, Oulu, and Sophia Antipolis**. These activities represent the first operational convergence of the project's technologies and establish the foundation for the final integrated platform.

Each site focused on a **complementary aspect** of the **CONVERGE** vision. Porto integrated the **physical experimentation environment**, combining radio equipment, intelligent surfaces, synchronized cameras, and orchestration services into a multimodal chamber. Oulu validated the **digital twin** workflow, linking 3D reconstruction, radio propagation simulation, network simulation, and visualization tools into a unified processing chain. Sophia Antipolis combined **radio and RIS experimentation with simulation capabilities** across both controlled and realistic indoor environments.

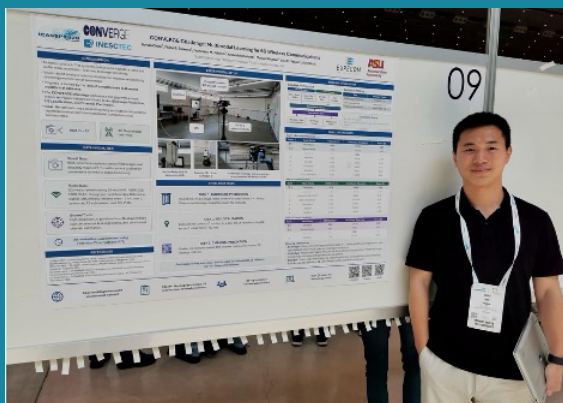
Together, these achievements demonstrate the **maturity of the CONVERGE toolset** and pave the way for the **final integration phase**, where physical infrastructures, digital twins, sensing, and communication technologies will operate as a single interoperable platform.



# CONVERGE Grand Challenge at ICASSP 2026

## ICASSP 2026 SP Grand Challenge

CONVERGE Challenge: Multimodal Learning for 6G Wireless Communications



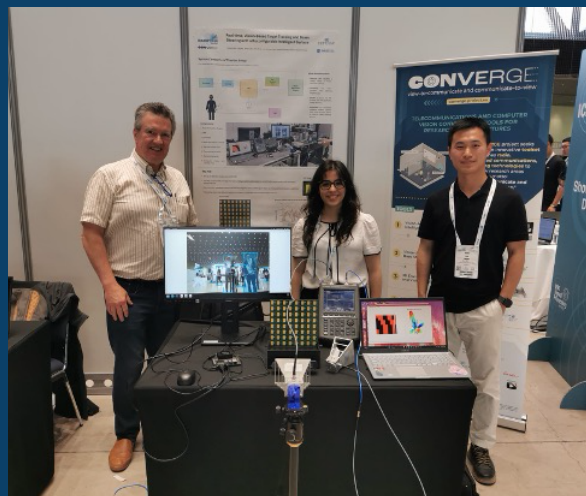
**CONVERGE** was featured at **ICASSP 2026** through the **Grand Challenge “Multimodal Learning for 6G Wireless Communications”**, organized by EURECOM, INESC TEC, and Arizona State University. The challenge addressed a key problem for future mmWave and sub-THz networks: how to **combine wireless and visual sensing information** to improve communication reliability in dynamic environments.

Participants were provided with a unique multimodal dataset collected in the **CONVERGE** chamber in Porto, combining synchronized radio measurements, RGB-D camera data, and ground-truth positioning information. The challenge included three tasks: **blockage prediction, user equipment localization, and wireless channel prediction**, encouraging the development of cross-modal machine learning solutions that bridge the wireless communications and computer vision communities.

The competition attracted **26 registrations** from five continents and resulted in **11 valid submissions**, demonstrating strong international interest in multimodal sensing and AI-driven wireless systems. The challenge successfully showcased **CONVERGE’s contribution to advancing research at the intersection of communications, sensing, and machine learning.**

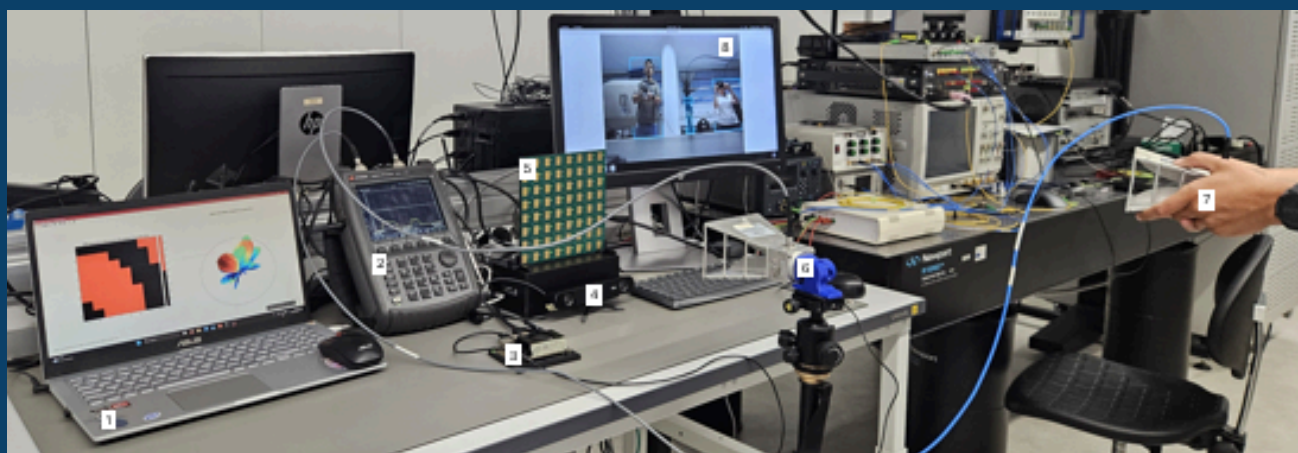
# Vision-Aided RIS-Based Beamforming Demonstration at ICASSP 2026

CONVERGE also presented a **Show & Tell demonstration at ICASSP 2026**, showcasing how computer vision can be used to enhance wireless communications through **real-time control of a Reconfigurable Intelligent Surface (RIS)**. The demonstration illustrated CONVERGE's vision of converging sensing, perception, and communications to create more adaptive and intelligent wireless environments.



Using a depth camera, the **system detected and localized visitors in real time** and converted their positions into **beam-steering commands for the RIS**. The selected beam pattern was then applied dynamically, while a live visualization displayed the corresponding radiation pattern and the resulting received signal strength. This allowed attendees to **observe how visual information can be used to optimize radio propagation** and improve wireless connectivity.

The demonstration provided an **engaging example** of vision-aided beamforming and highlighted the practical potential of CONVERGE technologies for future 6G networks, where sensing and communication are expected to operate as tightly integrated functions.



Experimental setup reproduced in the CONVERGE laboratory for integration and validation.

# ISAC Experimentation Webinar with OpenAirInterface

Integrated Sensing and Communication (ISAC) is a key enabler of 6G networks. To promote ISAC experimentation, **CONVERGE** and the **OAI Alliance** organized a **webinar dedicated to ISAC experimentation using OpenAirInterface (OAI)**.

The webinar featured contributions from **InterDigital** on ISAC standardization in ETSI and 3GPP, and a live demonstration by **Allbesmart** showing how 5G reference signals extracted from OAI can be used to monitor radio channel variations in real time. The approach supports AI-driven applications such as human activity recognition and intrusion detection. With **more than 130 attendees**, the event highlighted the growing interest in ISAC technologies across research and industry.



## Brooklyn 6G Summit Demonstration

At the **Brooklyn 6G Summit 2025**, the **University of Oulu** and the **CONVERGE** project contributed to the demonstration “**Multimodal Digital Twins for AI-RAN in Dynamic Environments**”. The demo showcased the **real-time generation of radio-aware digital twins** using multimodal sensing, including radio and camera data, combined with point-cloud-based ray tracing for AI-native RAN optimization. The demonstration highlighted key **CONVERGE** technologies and their role in advancing the convergence of wireless communications, sensing, and computer vision for future 6G systems.



# Seventh Meeting in Oulu



**University of Oulu (UOULU)** hosted the seventh and final Face to Face Meeting of the CONVERGE project on 18-19 May 2026, marking an important milestone as the project approaches its conclusion. Partners reviewed the **latest technical achievements** and coordinated the final activities for project completion.

A key highlight of the meeting was the demonstration of the **fully integrated CONVERGE toolset**, with the interaction between the CONVERGE Chamber, digital twin environments, multimodal sensing capabilities, and the dashboard, validating the project's vision of **converging communications, sensing, and computer vision within a unified experimentation framework**. The attendees also had a tour of the **Multimodal Sensing Lab** and the University of Oulu Campus.



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