AI-Enhanced Fiber-Wireless Optical 6G Network in Support for Connected Mobility

6G EWOC

Newsletter

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Back to Malaga - This was ECOC 2026

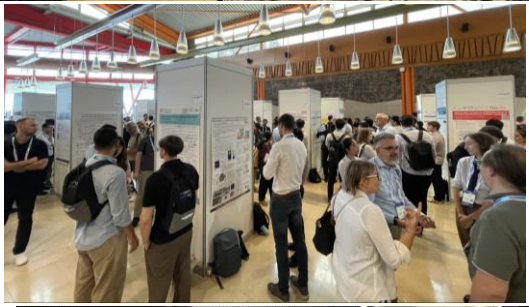
6G-EWOC enjoyed high visibility at the European Conference on Optical Communication (ECOC), which as second-largest conference in the field of optical telecommunications and datacenter technology, took place in September 2026 in Malaga. Oral and poster presentations on optical wireless communications were contributed by researchers from partner AIT, highlighting the project's latest results on wide field-of-view visible light communication for bent-pipe non-line-of-sight scenarios, and an optical hotspot for vehicular-to-infrastructure communication using pencil beams and integrated user localization. A second poster contribution by partner Bifrost Communications demonstrated 50 Gb/s quasi-coherent data transmission over a 25 km fiber fronthaul connection, using fully-analogue signal reception rather than DSP methods.

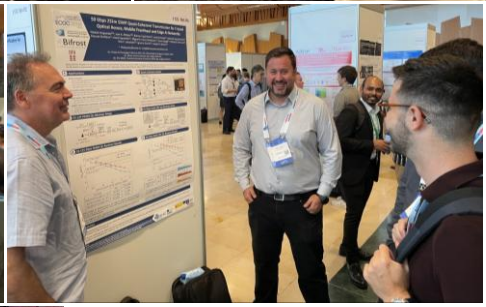
Moreover, researchers from project partners CTTC and UPC were running a live demo at ECOC's demo zone, showing how autonomous link restoration and capacity management in open optical networks can effectively support connected mobility services that require the instantaneous sharing of point-cloud datasets.

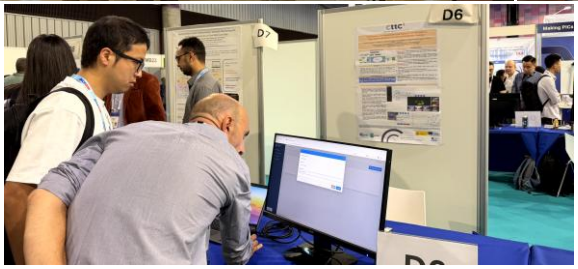
Besides these contributions to the scientific track of the conference, project partners LIGENTEC and Bifrost Communications were furnishing booths at the exhibition floor to demonstrate their capabilities, such as showcasing the latest advances of quasi-coherent communication technology – including not only latest results on high-speed fully-analogue fiber-optic data transmission, but also the actual pluggable prototypes housing the enabling photonic and electronic integrated circuits.

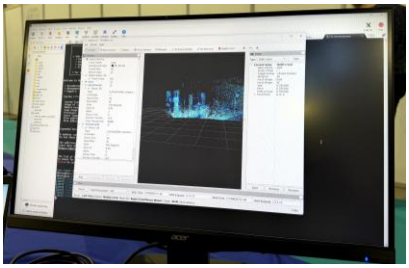












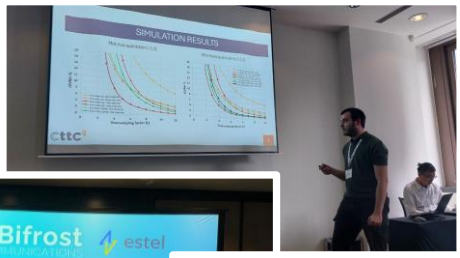
The 6G-EWOC project has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under the EU's Horizon Europe research and innovation programme under Grant Agreement No. 101139182. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Smart Networks and Services Joint Undertaking. Neither the European Union nor the granting authority can be held responsible for them.

Co-funded by the European Union 6G SNS



Our Contribution to ICTON Conference in Prague

With the start of the summer season, our researchers enjoyed a vivid ICTON conference in Prague. With its scientifically very broad agenda, the conference features three 6G-EWOC works, including two invited papers:



Project manager Jose A. Lazaro from UPC gave a talk on RaDAR technology with 6G-compliant integrated sensing and communication function. Joel Compte Prades from CTTC presented his work on non-linear delta-sigma modulation for radio-over-fiber transmission. Finally, Jose A. Altabas from Bifrost Communications presented 25 Gb/s quasi-coherent data transmission over 40 km fronthaul reach in his invited talk.





Our Recent Publications

- B. Schrenk et al., “Hybrid Single-/Multi-Carrier FR3-Band Radio with Optical Frequency Synthesis and Carrier Reclamation”, Journal of Lightwave Technology, vol. 44, no. 13, pp. 5531-5540, Jul. 2026.
- J.A. Altabas et al., “25 Gbps C-band Quasi Coherent SFP Transceiver for 40 km SSMF reach for Metro, Access and Front-Haul Networks”, in Proc. Int. Conf. on Transparent Opt. Netw. (ICTON’26), Prague, Czech Republic, Jul. 2026, paper We.B1.4
- J. Compte Prades et al., “Nonlinear Delta-Sigma Modulation for Efficient Radio Signal Digitization in Next-Generation Optical Fronthaul Networks”, in Proc. ICTON, ThA7.6
- J. Fernandez Ardanuy et al., “Evolution of NR V2X Mode 2: A Standard-Compliant Approach to Multiplexed ISAC in 6G Vehicular Networks”, in Proc. ICTON, Mo.C6.1
- J. Salavedra Pujol et al., “Collaborative Perception for Autonomous Driving: From Virtual to Real Datasets”, in Proc. 2026 IEEE Int. Conf. on Image Processing (ICIP’26), Tampere, Finland, Sep. 2026
- R. Martinez et al., “DRL-Assisted Energy-Efficient Control of Optical Access-Metro Networks for Connected and Automated Mobility”, in Proc. Int. Conf. on Photonics in Switching and Computing (PSC’26), Valencia, Spain, Sep. 2026, WeP1-A1.2
- B. Schrenk, “158° Wide-FoV Photomultiplier-Assisted Reception for Bent-Pipe Visible-Light Communication”, in Proc. Europ. Conf. Opt. Comm. (ECOC’26), Malaga, Spain, Sep. 2026, paper We3.F5
- F. Honz et al., “Optical Hotspot for Adaptive Pencil-/Wide-Beam Formation for Fiber-Wireless Connectivity with Integrated User Localization”, in Proc. ECOC, Mo4.P108
- N. Herguedas et al., “50 Gbps 25km SSMF Quasi-Coherent Transmission for C-band Optical Access, Mobile Fronthaul and Edge AI Networks”, in Proc. ECOC, We4-P81.

Meet the 6G-EWOC Team

- *Future Networks World Forum 2026, Lisbon, Portugal, 26th – 28th of October*

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