

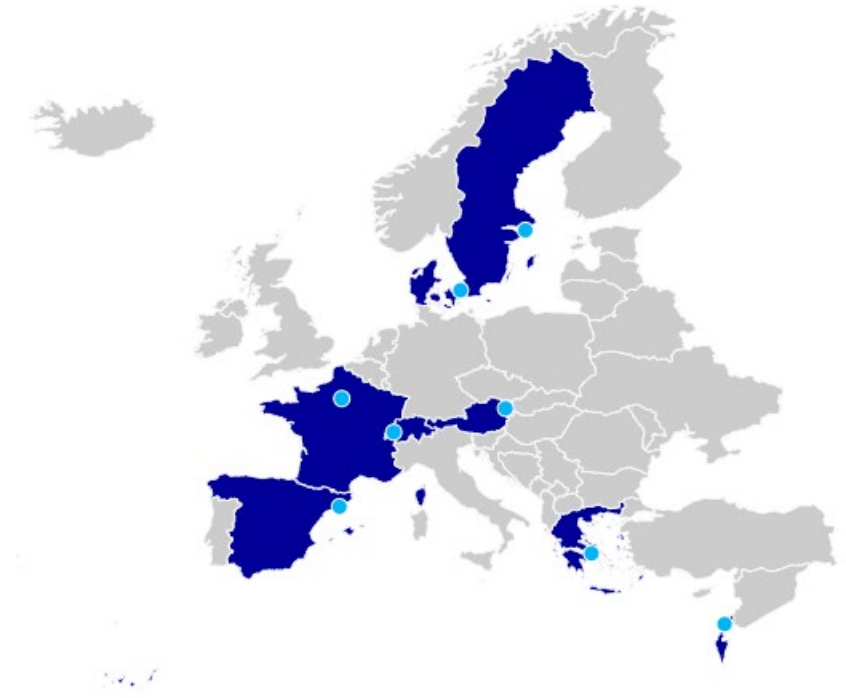


AI-ENHANCED FIBER-WIRELESS OPTICAL 6G NETWORK IN SUPPORT FOR CONNECTED MOBILITY

SNS Webinar – Introducing the Call 2 SNS projects - 7th March, 13:00 – 16:15 CET

Outlook

- Context
- Consortium
- Mission
- Architecture and Objectives



6G-EWOC Context

The sixth generation (**6G**) to open vast potentials for **individuals** and **businesses** to enhance opportunities and create **new technologies** in a wide range of sectors, including **industrial manufacturing, energy supply, digital healthcare, government and education, and efficient transportation.**

6G-EWOC contributes to this mission through its focus on connected and future autonomous driving. By connecting vehicles and making their collected information instantaneously available to all traffic participants, **6G provides a salient feature for safety and efficient transport on the road.**



6G-EWOC Consortium

Academic
and RTOs

Universitat Politècnica de Catalunya - BarcelonaTech, Spain, [Barcelona](#)



Centre Tecnològic de Telecomunicacions de Catalunya, Spain, [Castelldefels](#)



AIT Austrian Institute of Technology, Austria, [Vienna](#)



PIC & ASIC
Developer

III-V Lab, France, [Palaiseau](#)



Ligentec, Switzerland, [Ecublens](#)



Innovative
SMEs

Beamagine, Spain, [Barcelona](#)



Bifrost Communications, Denmark, [Kongens Lyngby](#)



System Integrators
and Operator

Nokia Bell Labs, France, [Paris](#)



Nvidia, Israel, [Yokneam](#)



Magna, Sweden, [Vargarda](#)

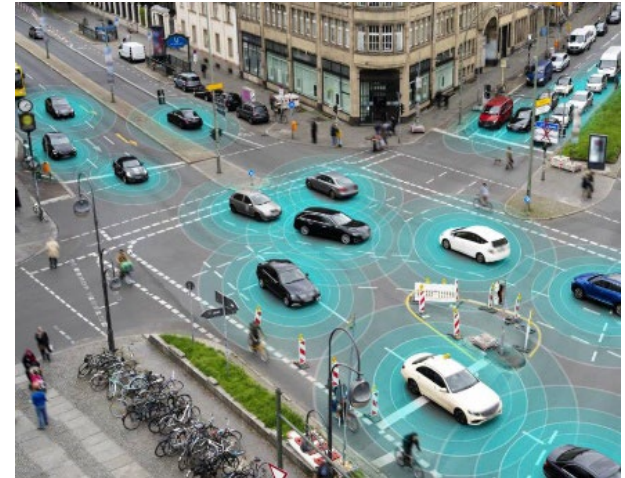


OTE, Greece, [Athens](#)



6G-EWOC Mission

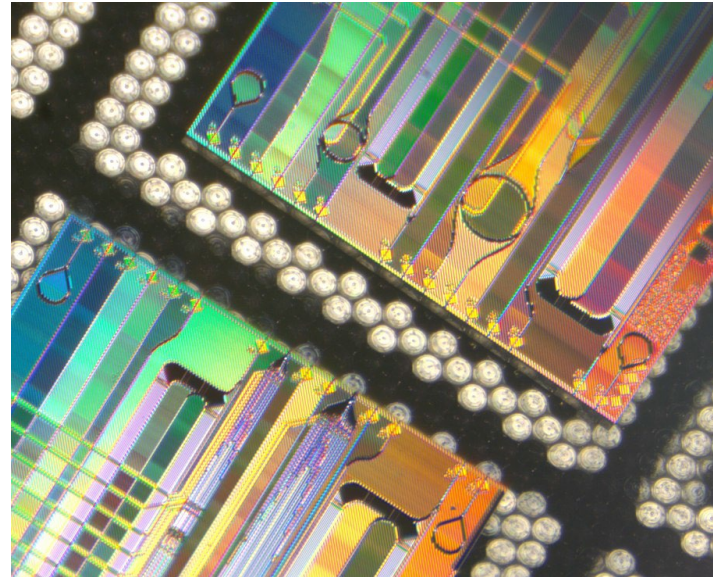
- **Road safety** is a primary concern as accidents cut short the lives of approximately 1.2 million people every year, and responsible for a large number of non-fatal injuries, many of them incurring disability.
- **Connected** and automated driving, enabled through **instantaneous access to information** for sharpening the situational awareness, can mitigate this toll on our society while enhancing the efficiency for transporting humans and goods.
- **Large volume of information to be shared** and made available to all traffic participants.
- Inclusion of **precise sensors, connectivity at low latency**, and a powerful compute infrastructure to **fuse**, in real time, the **vast amounts of data generated** along the roadside scenery.



6G-EWOC Architecture and Objectives

1

Optical wireless communication for vehicle-to-vehicle and high-rate vehicle-to-infrastructure applications, leveraging chip-scale optical beamformers

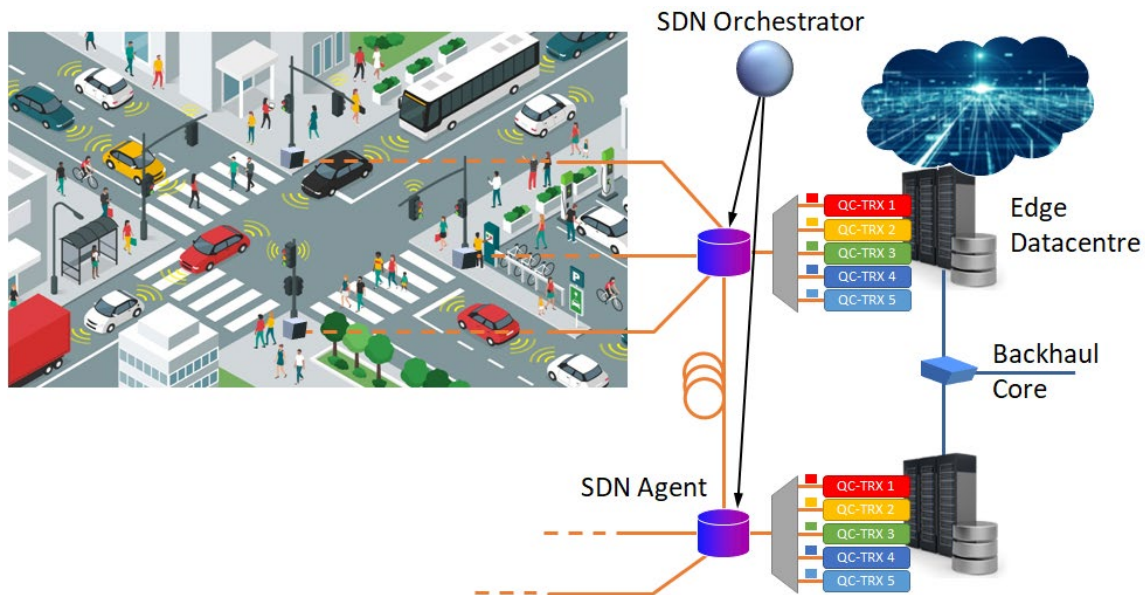


Photonic integrated circuit for optical beamforming
Copyright: AIT Austrian Institute of Technology

6G-EWOC Architecture and Objectives

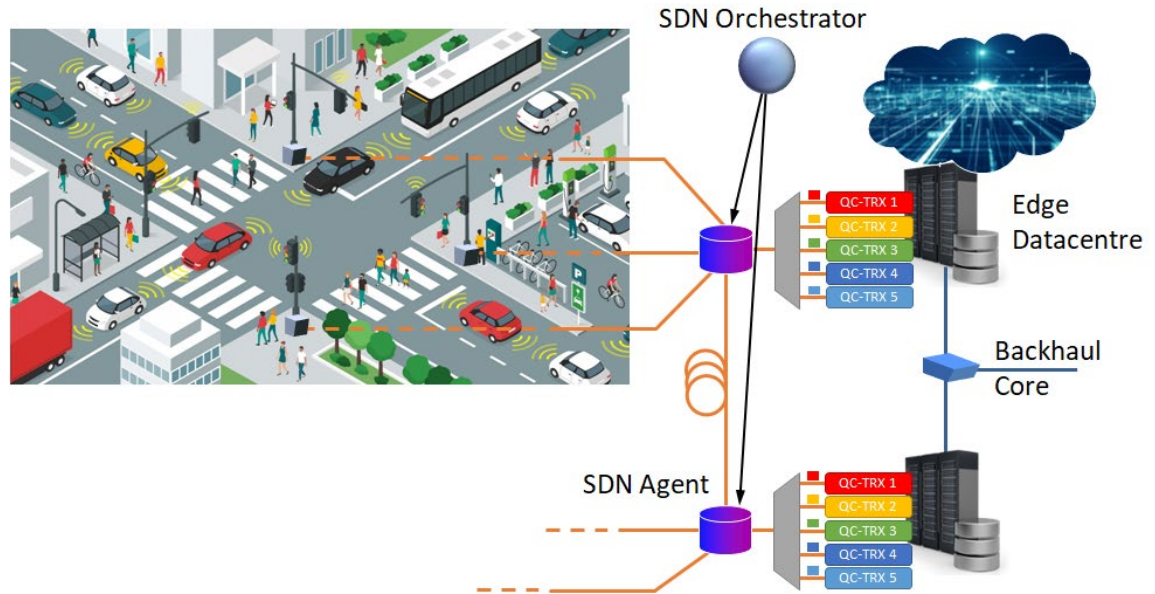
2 Efficient deployment of low-complexity connected laser/radio detection, ranging and communication (LiDAR/RaDAR) technology

3 Development of photonic integrated circuit (PIC) and electronic ASIC technology supporting high-capacity front-haul enabled through quasi-coherent reception



6G-EWOC Architecture and Objectives

- 4 SDN supporting the programmability of a flexible fronthaul network in connected mobility scenarios and intra-datacentre networks.
- 5 AI-assisted control and orchestration of network resources in the 6G-EWOC architecture
- 6 AI-based applications for autonomous vehicles employing multiple sensor technologies





Thank You!

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8 countries

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EU-funded: M€ 4.0

Duration: 36M 01/2024 – 12/2026

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