



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

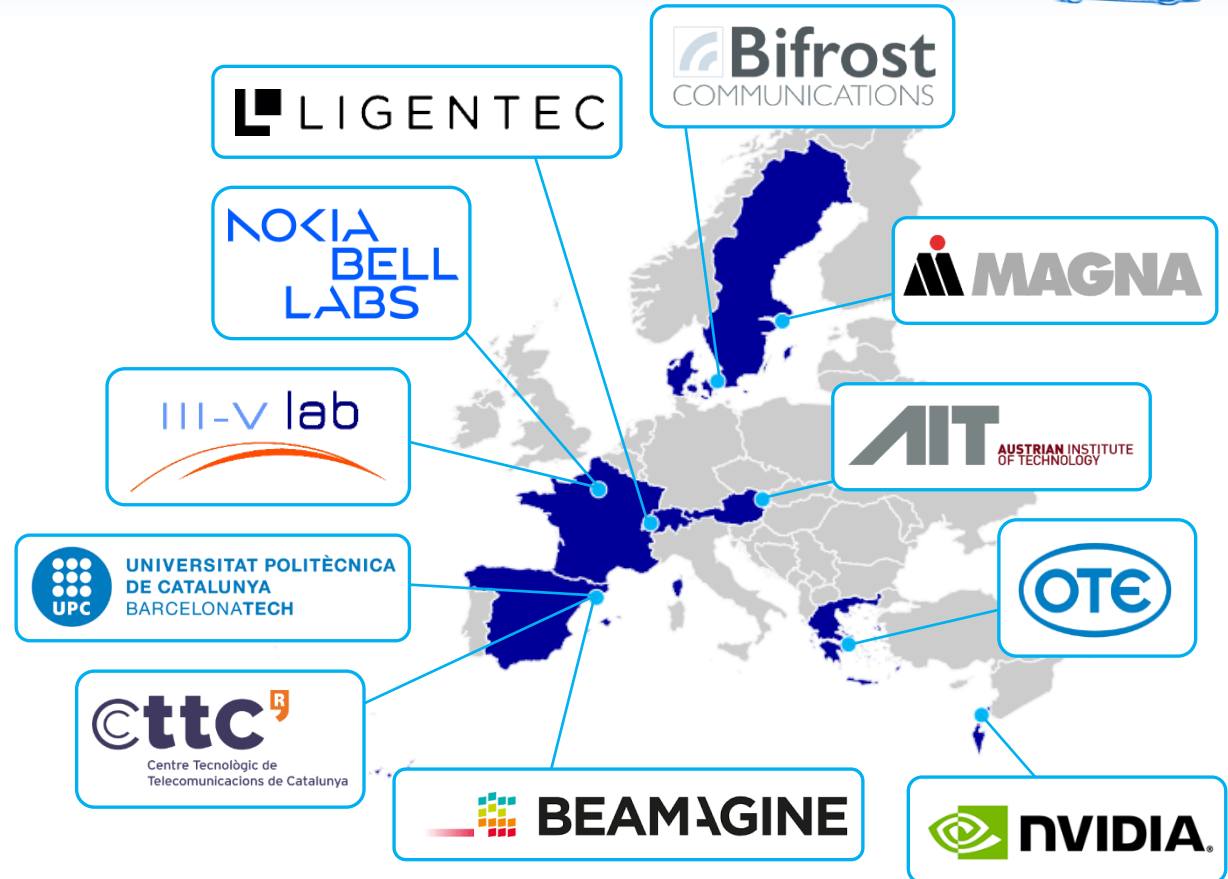
Project Presentation

Project Facts

Duration: 36M
01/2024 – 12/2026

Budget: M€ 5.2
EU-funded: M€ 4.0

11 partners
8 countries



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**.



Our Mission

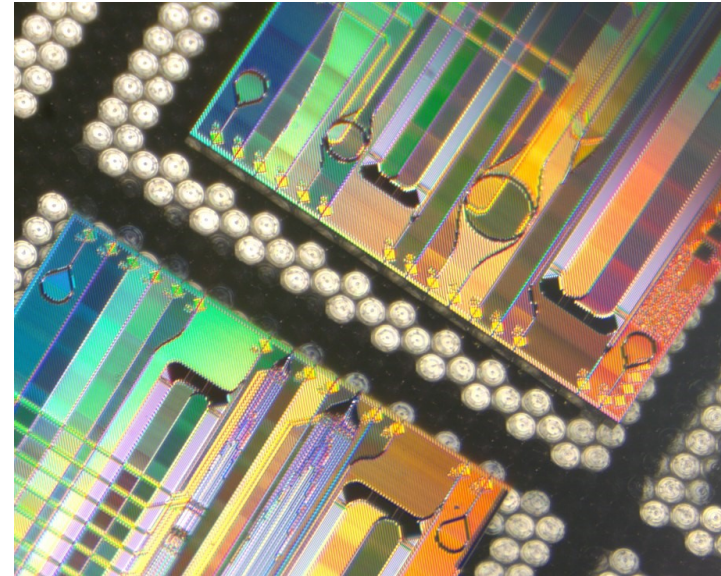
- **Road safety** is a primary concern as accidents cut short the lives of approximately 1.2 million people every year, and responsible for a large number of non-fatal injuries, many of them incurring disability.
- **Connected** and automated driving, enabled through **instantaneous access to information** 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 Objectives

1

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



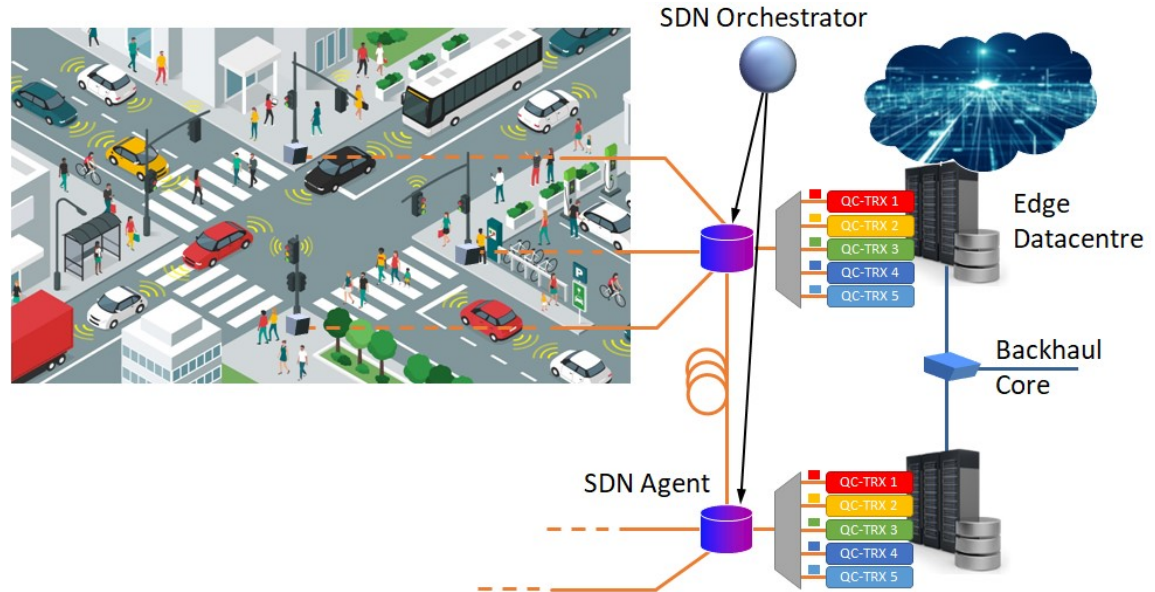
6G-EWOC Objectives

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

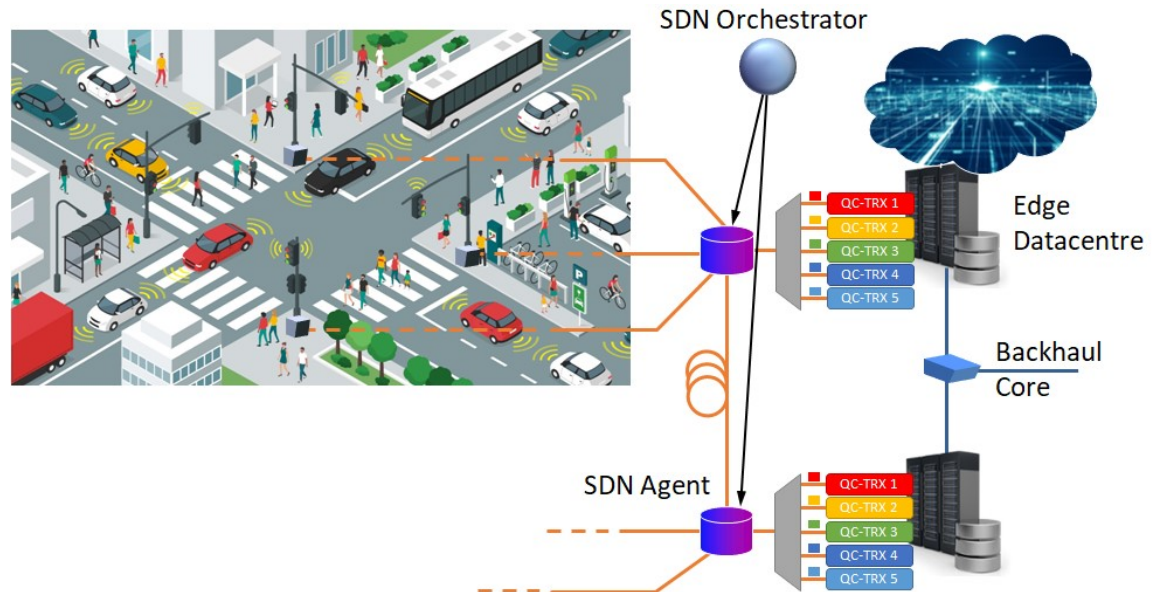


6G-EWOC Objectives

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



6G-EWOC Consortium



Academic
and RTOs

PIC &
ASIC
Developer

Innovative
SMEs

System
Integrators
and Operator

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



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



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



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



Ligentec, Switzerland, [Ecublens](#)



Beamagine, Spain, [Barcelona](#)



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



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



Nvidia, Israel, [Yokneam](#)



Magna, Sweden, [Vargarda](#)



OTE, Greece, [Athens](#)



Get in Touch with Us!



Project Coordinator:



José Antonio Lázaro

UPC – Universitat Politècnica de Catalunya
BarcelonaTech

✉ jose.antonio.lazaro@upc.edu

🌐 6G-ewoc.eu

[in](#) [6G-ewoc-project](#)



Co-funded by
the European Union

6G SNS

The 6G-EWOC project has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101139182.