



**Workshop on: “FutuRe Optical Networking Salon (FRONT): The EDGE”**  
**Barcelona, July 7<sup>th</sup>-9<sup>th</sup> 2021**

The Workshop on FutuRe Optical Networking (FRONT) is devoted to advancements that are revolutionizing the fixed optical networks. This year, the workshop will be focused on the technologies for the **EDGE** network, covering the access, the xHaul for 5/6G, the IoT, industrial scenarios and other applications.

### Focus

Future generations of fixed networks will require major advancements in many areas of optical network technologies. This workshop is dedicated to identifying technologies that enable the evolution towards the next generations while also investigating changes in architecture required to handle future needs and use cases. The goal being to enable a revolution of fixed network technology, towards massive Fibre-To-The-Everywhere/Everything (FTTE), expanding to new markets and applications.

### Outlook

Our goal in this time of changes and post-pandemics is to rekindle our academic discourse in a relaxed atmosphere, openly discussing about future communications technologies and reconnect with colleagues, in a kind of Academic Salon as we may call it. It will have a small dimension, 30-60 attendees. Renowned academics and researchers in the field are invited to participate at the Workshop. Industry experts are also welcome, in a general technology-neutral basis.

We have selected the dates July 7<sup>th</sup>-9<sup>th</sup> for our Workshop in Barcelona taking advantage of the expected broad immunization and of the huge Mobile World Congress (MWCbarcelona.com) taking place in Barcelona the previous week, from June 28<sup>th</sup>. After a week on mobile, it seems the timely occasion to put focus on the optical fixed network as the basis for broadband transport to everywhere and everything, may it be wired or wireless. We will enjoy the relaxed Mediterranean openness in an attractive venue and friendly atmosphere, after the long period of restrictions. The safeness of the event will be observed at all times (see below).

### Programme topics

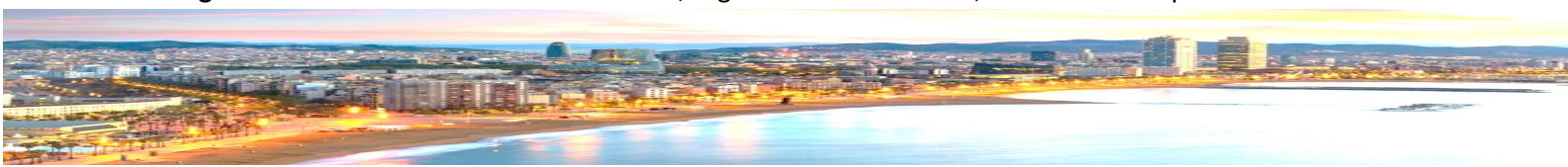
- innovative Point to Multipoint architecture and key technologies
- “lite” and/or low power consumption digital signal processing
- low cost coherent, including access network, metro, DCN/DCI transceivers.
- FMC (Fixed and Mobile Convergence): transparent wideband Radio-over-Fibre, optical wireless and free space optics, millimetre and THz wave backhauling
- new fibre, Si-Photonics, MultiChip Modules, cutting edge materials and processes
- network autopilot, AI based network automation for optical networks
- ubiquitous ultra-dense spectrum management
- edge computing and smart industrial IoT architectures in optical networks
- international Standardization activities and other forums.

**Program Committee:** Prof. Ioannis Tomkos, Prof. Antonio Teixeira, Prof. Josep Prat.

**Main venue:** Vertex, Campus Nord UPC, Barcelona. <https://goo.gl/maps/4WSrFtPwP7ccZQaY7>

**Contact:** Prof. Josep Prat, email [jprat@tsc.upc.edu](mailto:jprat@tsc.upc.edu), tel. +34 93 401 6455. Address: c/ Jordi Girona 1, UPC ETSETB D5, 08034 Barcelona.

**Registration fee:** free for invited academics; regular attendees: 140€, PhD students: sponsored.



# Preliminary agenda

Day	Topics
<b>July 7th</b> <b>(afternoon)</b>	1.-Future optical networks <ul style="list-style-type: none"><li>- Requirements and architecture of next generation networks</li><li>- Edge computing, smart industry, IoT</li><li>- Towards full optical networks, spectrum management</li><li>- Auto Pilot Networks</li><li>- Standardization activities and other forums.</li></ul> Open Discussions Visit, Guided tour, dinner
<b>July 8th</b> <b>(morning)</b>	2.-Advanced enabling Subsystems <ul style="list-style-type: none"><li>- Low cost coherent and smart transceivers.</li><li>- Signal processing at the edge</li><li>- Innovative Point to Multi point architecture and technologies</li><li>- Wideband mobile 5G/6G backhauling</li><li>- Quantum communications</li></ul>
<b>(afternoon)</b>	3.-Advanced enabling Technologies <ul style="list-style-type: none"><li>- Advancements in fibre technologies</li><li>- Low cost components</li><li>- Photonic integration, co-packaging, materials</li><li>- Sensing in optical networks</li><li>- LiFi / Free-space Optics</li></ul> Open Discussions Guided tour, visit, dinner
<b>July 9th</b> <b>(morning)</b>	4.-Converged Networks and new applications <ul style="list-style-type: none"><li>- Industrial networks, scenarios in Industry 4.0/5.0, security, availability, autonomous guided vehicles (AGV)</li><li>- Vertical markets</li><li>- Converged wireless and fiber networks</li><li>- Distributed computing resources in sixth generation networks</li></ul> Open Discussions

**Social events/activities (tbc):** UPC Marenostrum supercomputer, Lab visit, Norman Foster Telecom Tibidabo tower walk and visit, Gothic quartier guided tour, Gaudi/modernist guided tour, sea tour, traditional human castles,

## Relevant coordinated links

- IEEE Communications Magazine; Special Issue Cfp: Fixed 5th Generation: Bringing Fiber to Everything <https://www.comsoc.org/publications/magazines/ieee-communications-magazine/cfp/fixed-5th-generation-bringing-fiber>
- ETSI. Fixed 5G Network (F5G): <https://www.etsi.org/committee/f5g>
- FRONT-EDGE Workshop site: <https://qco.upc.edu/en/research/optical-access-networks/front-edge-workshop>

## Safety measures

Our aim is to have a face-to-face Workshop with almost-normal gathering with colleagues. The current fast increasing Covit19 vaccination rhythm makes us optimistic on expecting general immunity (specially academics, as an exposed community), and thus may not have much travelling restrictions. At the Workshop, strict safety measures will be taken, following the regulations at that time, which we expect to more relaxed. The Covit19 safety methodology will take advantage of the MWC experience with about 50,000 attendees (109,000 at the 2019 edition) the previous week (<https://www.mwcbarcelona.com/attend/safety>), and of other events. In principle, the following measures will be taken:

- Social distance in the Workshop (>1.5m), mask, temperature test and hidroalcoholic gel at entrances.
- The workshop room has a capacity higher than the triple of the number of attendees, with ventilation.
- Signing self-responsibility form, confirming vaccination, immunity, negative 72h test or self-protection.
- PCR-fast tests for all those without <72h test or not immune.
- An external specialist will be hired for implementing the Covit19 measures; confidentiality assured.
- Medical service on-site.
- Attendance certificate/pass will be delivered.

