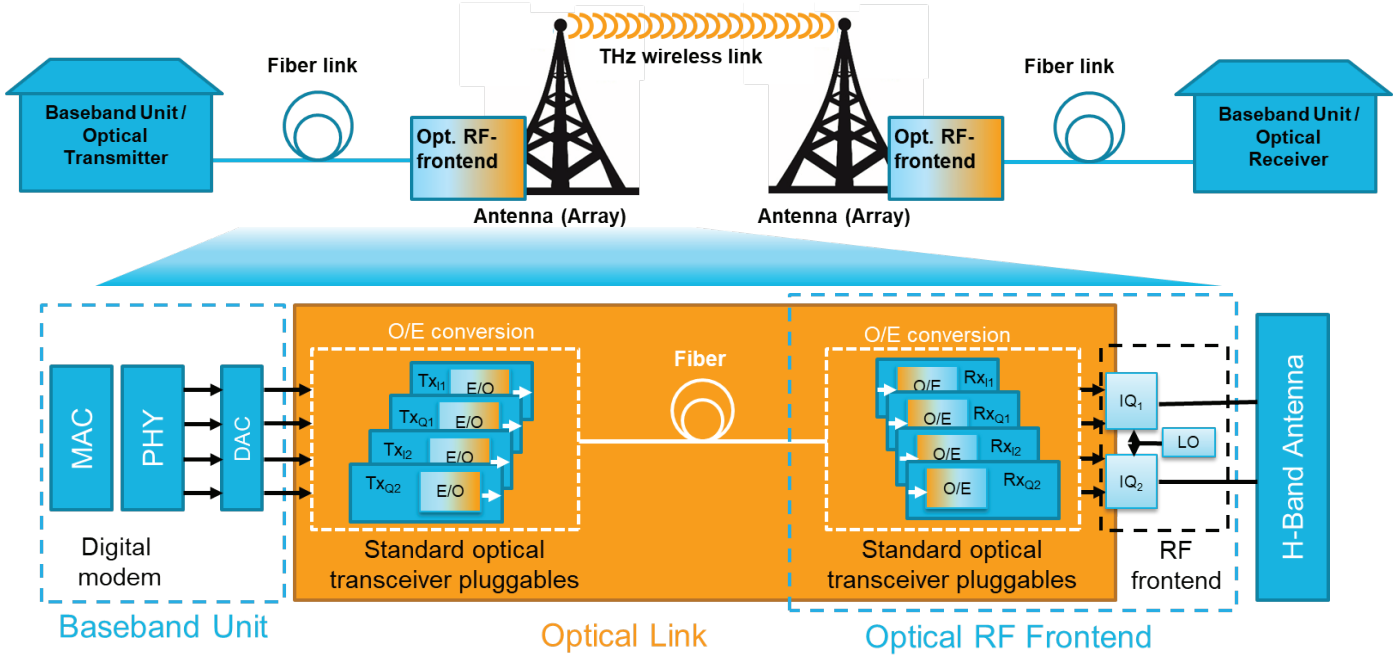


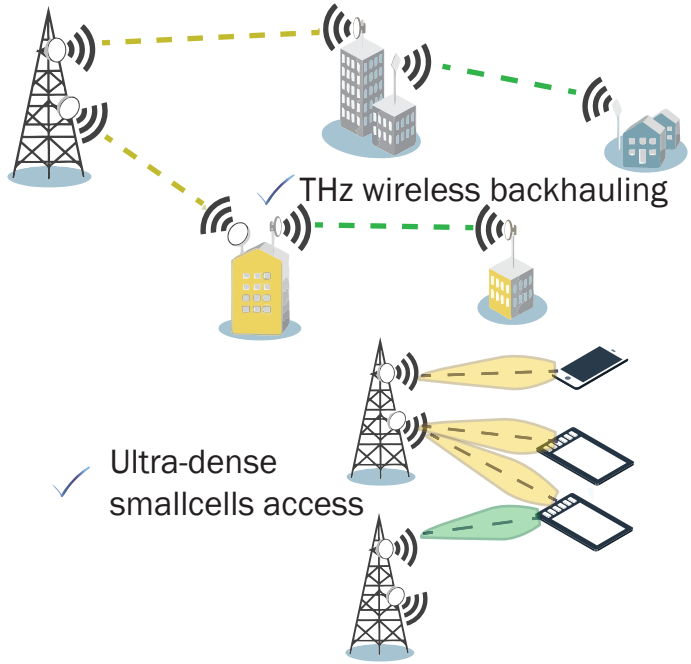
- Tbps capable components and interfaces
- Co-designed optical wireless THz systems
- THz wireless access and backhaul network architectures

The consortium will employ breakthrough technology concepts for networks beyond 5G

- ✓ Baseband signal processing for the complete optical and wireless link
- ✓ THz wireless frontends and their integration with photonic components
- ✓ THz network information theory framework and channel & interference models
- ✓ Higher order modulation schemes and pencil beamforming antenna arrays
- ✓ MAC protocols, caching techniques and multiple access schemes

Applications and Usage scenarios

TERRANOVA will act as enabler for a vast range of future applications in beyond 5G systems. The usage scenarios in systems beyond 5G can be categorized based on their key performance metrics all with the requirement of Tbps rate.



✓ THz wireless backhauling

✓ Ultra-dense smallcells access

✓ Ultradense indoor/ office applications

Innovation Pillars

- *Co-design of signals, codes and protocols*
- *Tbps wireless connectivity*
- *Co-design of optical and THz wireless*

Project Figures

Project Start:
1st of July, 2017

Duration:
30 months

Total Funding:
€2,996,775.00

Consortium

7 partners from 5 different EU countries with complementary skills in

- ✓ THz integrated circuit design and manufacturing
- ✓ Baseband design and DSP
- ✓ Mobile / optical communication system design and modelling
- ✓ Wireless access technologies and PHY/MAC design
- ✓ Information theoretical analysis and network resource management
- ✓ Business Modelling

Large Industry Partners:
INTRACOM TELECOM, Altice Labs

Small/Medium Enterprises:
JCP C, PICadvanced

Universities:
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ UNIVERSITY OF PIRAEUS, UNIVERSITY OF OULU

Research Centre:
Fraunhofer

Networking Research Beyond 5G

TERRANOVA

TeraBit Wireless Connectivity by TeraHertz Innovative Technologies

"Deliver optical network Quality of Experience in wireless systems beyond 5G"

Concept

TERRANOVA envisions to extend the fiber-optic systems' Quality of Experience to wireless links.

- ✓ Reliable connectivity
- ✓ Tbps data rates
- ✓ Near 'zero latency'
- ✓ Frequencies > 275 GHz

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https://europa.eu/project/rcn/211078_en.html