

A glowing blue globe with network lines and a hand holding it. The globe is the central focus, surrounded by a network of glowing blue lines and nodes. A hand is visible at the bottom, holding the globe. The background is dark blue with a white border.

OULU OPEN 5G NETWORK FOR TESTING VERTICALS

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<http://www.5gcwc.com/>

Collaborators in The Finnish 5G Flagship

5G Test Network Finland (www.5gtnf.fi) programme composed of 4 projects running at all major cities.

Four major parts in the national testnetwork:

- CWC Open 5G Network
- VTT 5G testnetwork
- Aalto 5G testnetwork
- Ylivieska LSA testnetwork



Oulu Open 5G Offerings



Project Part-Financed
by the European Union

European Regional
Development Fund

- Real-life Lab for testing 5G portfolio, New Services, Applications and Business Models
- Current status
 - Outdoor & indoor coverage built @ 2.6GHz. 3.5GHz soon to be added
 - Health Lab at University Hospital connected mid-2016. Other institutions on need basis
 - Commercial EPC for 100k users under installation. Interconnection to other networks available
 - Mobile edge computing for service development and Big Data analysis Q3/16
 - IoT extension with ~1000 nodes enabling future wireless campus planned for Q4/16
 - Q1/17
 - 100 testphones currently; target to offer SIM for students and personnel to enable testing with 15-20000 users at the campus area

Existing and near future commercial (LTE) technologies implemented with carrier grade and OSS enabling also trials for different operator service models.



Roadmap for 2016-2018

2016

- LTE support for M2M
- PoC 5G radios
- Virtualized, cloud based core
- Test environment available for 3rd parties
- Real-time network management running
- Mobile edge computing
- IMS / VoLTE
- Network programming APIs
- CDN services
- Trusted and non-trusted WLAN integration + controllers

2017

- LTE-U / LWA
- PoC for Gbit/s level data rate over mmWave radio link
- PoC for ms level latency over 5G
- 8k video stream
- 5G channel model algorithm validation
- SDN/OpenFlow controlled network transport
- Co-operation with research projects
- Co-operation with industry players

2018

- 5G Network Architecture validation
- Micro-operator business model research & validation
- Connections to 5G test beds around the world
- Capabilities on performing tests on all foreseen 5G frequencies
- Detailed real-life tests on 5G link and radio features (massive MIMO, ultra-wide band, etc.)
- Network-level performance tests with novel core functionality

3rd party usage principles:

http://5gtn.willab.fi/wp-content/uploads/2016/01/Common-description-of-operative-models-for-third-party-activities-in-the-5G-test-network_160114.pdf

Verticals to be tested at Oulu Open 5G

Existing and proposed near future national activities at CWC

Health

"Wireless hospital"



Cars & Traffic

"Arctic smart traffic"



Real Estate

"New operator business models"



Energy

"Dynamic pricing in energy cloud"

