



# End-to-End-Aware Optimizations and Advancements for the Network Edge of 5G New Radio



**Duration: June 2017 – May 2019**

**Funded by EU (Horizon 2020)**

**Contact: Stelios Stefanatos <stelios.stefanatos@fu-berlin.de>**

[one5g.eu](http://one5g.eu)  
 @ONE\_5G  
 ONE5G

## Project Scope

- ◆ To propose 5G New Radio extensions for standardization which enable high-performance wireless services in ‘Mega-cities’, e.g., dense urban environments with very heterogeneous requirements, and ‘Underserved Areas’, e.g., less populated and with relatively homogeneous requirements areas
- ◆ To develop advanced 5G technologies and enhancements, beyond release 15 of 3GPP, which will deliver the first set of 5G standards in 2018. These advanced technologies include future-proof access schemes, advanced massive MIMO enablers and link management
- ◆ To deliver on 5G New Radio performance optimization schemes for successful network deployment and operation with a focus on improved performance experience for both the network operator and the end-to-end user
- ◆ To identify and improve the cost driving elements in roll-outs and operations in undeserved areas under constrained circumstances



## Analysis and Design Tools

- ◆ Digital Communications
- ◆ Information Theory
- ◆ Compressive Sensing
- ◆ Queuing Theory
- ◆ Stochastic Geometry
- ◆ Estimation/Detection Theory

## AG-COMM Focus

- ◆ Advanced pilot and feedback design for massive MIMO transmissions
- ◆ Cooperative distributed massive antenna systems (cloud-RAN architecture)
- ◆ Advanced network control for end-to-end multi-service performance optimization

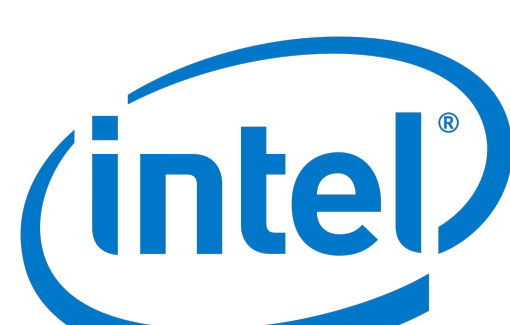
**NOKIA** Bell Labs



**b com**



**Fraunhofer**  
Heinrich Hertz Institute



**NOKIA**

**SAMSUNG**

**Telefonica**



UNIVERSIDAD DE MÁLAGA

