



pE2E-aware Optimizations and advancements for the Network Edge of 5G New Radio

ONE5G

MAIN OBJECTIVES

- To propose the necessary 5G extensions, [...] to address the two selected scenarios ('megacities' and 'underserved areas')
- To build consensus on new features [...] and provide technical recommendations for moving 5G towards '5G advanced (pro)'
- To propose advanced link technologies and enhancements beyond release 15 to enable multi-service operation and practical implementation of '5G advanced (pro)', with future-proof access schemes, advanced massive MIMO enablers and link management.
- To research and deliver highly generic performance optimization schemes [...], in order to achieve successful deployment and operation, including optimizations for both the network operator and the E2E user-experienced performance.
- To identify the cost driving elements for the roll-out and operation and to propose adaptations to allow sustainable provision of wireless services in underserved areas under constrained circumstances.
- To validate the developed extensions and modifications through different approaches: analytically, by means of extensive simulations and with the help of proof-of-concepts for selected aspects.

USE CASES

Enhanced Mobile Broadband (eMBB), Ultra-Reliable Low Latency Communications (URLLC), massive Machine Type Communications (mMTC).

TECHNICAL AND RESEARCH CHALLENGES

- Future proof multi-service access solutions
- Massive MIMO enablers
- Advanced link management based on multi-cell processing

- Optimized multi-link management for improved E2E performance
- Network and user-experienced E2E performance optimization and context awareness

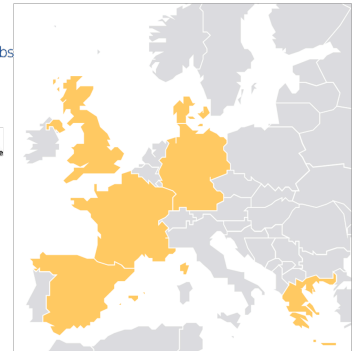
EXPECTED IMPACT

Standardization: release 16 and 17 of 5G New Radio.

Commercial and market impact: Empower traditional operators and vertical industries to efficiently exploit the opportunities of 5G New Radio

Scientific and technological impact: Drive forward technical advances in the areas given above.

Socio-economic and environmental impact: Enrich both private life and business/industrial activities with enhanced wireless communication services.



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Partners:

Alcatel-Lucent Deutschland AG (coordinator, part of Nokia), Orange SA (technical management), Aalborg University, B-COM, Centre National de la Recherche Scientifique, HHI, Freie Universität Berlin, Huawei Technologies Düsseldorf GmbH, Intel Deutschland GmbH, Nokia Denmark, Samsung Electronics UK, Telefónica I+D, Universidad de Malaga, WINGS ICT Solutions

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