



3rd International Workshop on 5G RAN Design

While 5G research has already started some years ago, with large collaboration projects such as METIS initially paving the ground by aligning views on key use cases and requirements, and by identifying and researching key technology components for 5G, there is still a long way to go before the successful roll-out of commercial 5G deployments. In particular, there is still the need to find consensus on key design aspects in 5G, as for instance how tightly novel air interfaces variants in 5G will be integrated with each other and with legacy technology, and to which extent functionality on different protocol stack layers can be harmonized for all bands, services and cell types. The 5G PPP projects METIS-II, FANTASTIC-5G, mmMAGIC, 5G-CROSSHAUL and Flex5Gware all have the aim to take the 5G design one step further in level of detail, find consensus on key design aspects such as mentioned above, and prepare a smooth start of 3GPP study items in 2016 and work items in 2017.

The workshop, which is jointly organized by **METIS-II**, **FANTASTIC-5G**, **mmMAGIC**, **5G-CROSSHAUL** and **Flex5Gware**, will build upon its successful predecessors, focus on the 5G RAN design and provide the opportunity to share and discuss final results from the mentioned projects or other 5G research activities. The workshop organizers solicit original, unpublished technical papers in particular in the following fields:

- 5G physical layer and hardware implementation concepts, e.g.
 - waveforms, synchronization, numerology, unified frame structure concepts
 - effect of hardware impairments on the PHY design
 - means for ultra low-latency and ultra high-reliability, native support of D2D V2X and multi-cast
 - low-complexity massive MIMO solutions and enablers
 - solutions for contention-based access (TDD/FDD, pilot contamination, antenna correlations etc)
- MAC, RLC, PDCP and RRC concepts, in particular related to an efficient integration of multiple novel 5G air interfaces among each other, and with evolved legacy technology. Examples:
 - Novel resource management concepts for a wider range of service and QoS requirements and novel communication forms such as D2D, or spectrum sharing (LSA, ASA)
 - Novel initial access and mobility concepts, in particular in the context of the integration and co-location of multiple novel and legacy air interface in 5G
 - Novel multi-connectivity approaches and related enablers
- Backhaul/fronthaul design and capabilities for multi-tier ultra-dense heterogeneous small cell networks
 - Joint design and optimization of radio access and backhaul/fronthaul networks
 - Optimized backhaul/ fronthaul integration (wireline or wireless) and control
 - Backhauling and fronthauling options for a split control and data plane
- RAN Architecture concepts associated to the overall control plane and user plane design such as
 - E2E Network slicing, in particular its impact to the RAN
 - Novel 5G RAN Interfaces, CN/RAN interface, functional placement
 - Concepts associated to the impact of SDN/NFV to the 5G RAN design
- Energy efficiency assessment of the 5G RAN
- Business models and techno-economic assessment

Important Dates:

Paper Submission: 18 November 2016
Notification Date: 17 February 2017
Final Paper: 10 March 2017

Organizing Committee:

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