



Call for Papers: Workshop on Virtualized Coordinated Spectrum Access for 5G Communications Systems

In its 5G White Paper, NGMN demands 5G to provide efficient support of new business models and partnership models across industries. This implies increasingly heterogeneous demands on spectrum resources, their availability and utilization. Greater flexibility is a common requirement to all network components, including spectrum management.

Network virtualization technology is playing a central role in 5G, as it promises to create customer-specific logical networks on a shared infrastructure and thereby increases the flexibility in network utilisation and management.

This workshop aims to bring the concepts of dynamic allocation of spectrum to network services and virtualization together and explore if and how novel architectures and technologies based on virtualization can increase the efficiency in spectrum utilization.

Mobile data traffic is predicted to grow tremendously in the next years, and service demands are expected to vary in a wide array of diverse and extreme requirements: There will be a need for super-fast and reliable connectivity with virtually zero latency for use cases such as remote control of robots, as well as the need of support for billions of sensors and things.

Radio spectrum is a particularly critical resource in carrying this traffic: Especially in the low frequency ranges that are most suitable for wide-area coverage, radio spectrum is limited and scarce. However there are also frequency bands, licenced e.g. to governmental agencies, that are underutilized in time or geography. Dynamic reallocation of such frequency bands between different services could help to meet the spectrum demand for mobile radio services and result in more efficient spectrum usage.

Network virtualization is a technology for sharing network resources between multiple logical networks: Provide dedicated logical networks with network customer specific functionality, without losing the economies of scale of a common infrastructure. Virtualization has been applied successfully in data centers. In 5G, its usage is extended to the whole network. A 5G end-to-end network architecture that is capable of enabling a diverse set of services in an efficient and profitable way has to be programmable and software-driven. Applying these architecture principles systematically in an end-to-end manner implies that radio spectrum should be managed in the same way as other network resources: Access to spectrum should be virtualized and coordinated by programmable, software-driven control functions as well.

This workshop explores novel concepts for dynamic spectrum allocation and virtualized access to spectrum as well as the integration of these concepts into novel 5G end-to-end network architectures. Contributions are requested to, among others, the following areas:

- Requirements on dynamic spectrum management
- Methods to ensure spectrum availability and service quality in the context of dynamic spectrum management
- Centralized and decentralized methods of managing virtualized spectrum
- Dynamic spectrum management for multi-tenancy and multi-service network operation
- Applicability of SDR, SDN and other virtualization methods
- SDN-based radio resource management
- Spectrum aspects to support network slicing
- Impacts to RAN architecture
- System concepts and end-to-end architectures
- Regulatory aspects
- Business demands and economic aspects

Important dates:

Submission deadline: June 17, 2016

Notification of acceptance of papers: July 8, 2016

Submission guidelines:

Papers should be written in English with a maximum length of 5 pages (two-column A4, 10-point font) following the standard IEEE manuscript template. The submission has to be performed electronically via [EDAS](#).

The accepted papers will be published on IEEE Xplore.

General Chairs:

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