Special Session Call for Papers
5G Wireless and Optical Technologies for Mobile Communication Systems (5G Fi-Wi for MC)

Overview

Considering the ever-increasing traffic demand and required quality of service, current 4G wireless access networks will soon arrive to their limit. For this reason, it is foreseen that the commercial deployment of the first 5G networks will probably occur by 2020 and will respond to a set of predefined requirements mainly: 1) support for ultra-high capacity and massive connectivity; 2) support for an increasingly diverse set of services, applications and users; and 3) flexible and efficient use of all available non-contiguous spectrum for wildly different network deployment scenarios. In order to respond to the above-mentioned requirements important technical challenges need to be solved. Current research efforts on 5G Radio Access Networks (RAN) strongly focus on Optical/Wireless convergence, small cells deployment, massive-MIMO and millimetre-wave (mmWave) access for addressing the critical limitations of currently deployed cellular systems. Industrial and academic institutions concur that it is of great importance to develop evolutional paradigms that ensure the functional combination of the above technologies into a 5G cellular architecture and its associated ecosystems providing new vertical services. This special session, co-located in IMCL 2019, aims to offer an opportunity for academic and industrial researchers to discuss on feasible solutions including evolutional technologies and ecosystems for the realization of 5G and beyond.

Topics

Prospective authors are invited to submit original and unpublished work on research topics including the following:

- Novel 5G radio access network (RAN) architectures.
- Fiber/Wireless convergence for 5G Front/Back-hauling.
- Analog/Digital Radio-over-Fiber solutions for 5G communications.
- CoMP (coordinated multi-point) transmission and reception.
- Access control for converged hybrid Optical/Wireless networks.
- Distributed antenna systems.
- Advanced relaying, user terminal relaying.
- Small cell deployment, femtocells, picocells for dense/ultra-dense deployment.
- Terminal intelligence, Context awareness.
- Advanced radio resource management (RRM) techniques.
- Interference management, interference awareness.
- Inter-cell interference coordination (ICIC, eICIC).
- Congestion management.
- Emerging technologies in 5G physical layer.
- Interference-robust air interface.
- Higher-order massive MIMO, Active antenna systems (AAS).
- Multiuser communications, Network information theory.
- Novel modulation and coding schemes.
- Enhanced voice and video, Telepresence
- Point-to-point (P2P) / device-to-device (D2D) communications
- mmWave 5G communications.
- Channel characteristics and modelling.

- Beamforming, beam tracking; Mobility solutions.
- Energy efficiency and energy consumption models.
- Joint RF-baseband optimization, end-to-end energy optimization.
- Aggregation of intra and inter-band carriers for both FDD and TDD.
- Cognitive radio and dynamic spectrum access.
- Adaptive radio access techniques.
- Prototyping and test-bed for emerging 5G technologies.

Contribution Types

Proposals for participation in the Special Session can be submitted in the following formats:

- Full Paper (min. 10 max. 12 pages). These include mainly accomplished research results.
- Short Paper (min. 6 max. 8 pages). These are mostly composed of work in progress reports or fresh developments.

All submissions will be peer-reviewed by at least two reviewers. All accepted papers will be included in the conference proceedings, provided at least one author pays the registration fee. The conference proceedings will be published as IMCL2019 Proceedings in the Springer series "Advances in Intelligent Systems and Computing".
For further questions, please contact the track chair(s).

Important Dates

08 Jul 2019 Submission of complete papers for special sessions
29 Jul 2019 Notification of acceptance
06 Sep 2019 Camera-ready due & Author registration deadline
31 Oct 2019 Conference Opening

Submission

Please visit: https://www.conftool.net/imcl-conference/ and submit your paper as in the special session **"5G Wireless and Optical Technologies for Mobile Communication Systems (5G Fi-Wi for MC)"**

Program Committee

Chair(s)

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Dr. Christos Vagionas, Senior Researcher, Aristotle University of Thessaloniki, Greece

Association to Projects

The special session is supported by the following projects:

H2020 MSCA ITN **5GSTEPFWD**	H2020 5GPP Phase II **5G-PHOS**	H2020 MSCA ITN **SPOTLIGHT**
5G STEPFWD	5G phos	SPOTLIGHT