Special Session:

Special session: Post-OFDM waveforms for 5G radio access technology

The Special Session will be part of the 14th International Symposium on Wireless Communication Systems (ISWCS 2017), technically co-sponsored by the IEEE Communications Society (ComSoc), to be held in Bologna, Italy, on August 28-31, 2017. Paper submissions are invited on the Special Session topic.

Special Session papers will be reviewed by the TPC of ISWCS 2017; they will be part of the Conference Proceedings and they will be uploaded to IEEE Xplore.

Call for Papers

Fundamental research towards 5G cellular networks is ongoing and driven by the Machine Type Communications (MTC) and Internet of Thing (IoT) applications. These technologies impose severe constraints on system latency, less than 10ms, high data rate and robustness to users' asynchronism. It is unlikely that these challenges can be satisfied using Orthogonal Frequency Division Multiplexing (OFDM) adopted by the current LTE-A. Its poor frequency localization and out-of-band (OOB) radiation make it inadequate for future asynchronous 5G applications. One of the critical questions asked by researchers and industrials is: which waveform should we apply for 5G networks?

Many research and industrial efforts have been carried out in order to design enhanced multicarrier non-orthogonal waveforms. We can particularly cite the FP7 European projects PHYDYAS, METIS and 5GNOW. From these projects, and from many others, several alternatives to OFDM have seen the light. We can cite FBMC/OQAM, UFMC, GFDM, filtered OFDM, WOLA, ...

The partners of the French National project WONG5, organizing this special session, are working on the study and comparison of the best waveforms that can be adapted to "Machine Type Communication (MTC)" physical layer, in the 5G context.

This special session will be a good opportunity to researchers in the field in order to brainstorm on and to identify the emerging waveforms for 5G networks. We aim to bring together leading researchers in both academia and industry in an effort to identify and discuss the major technical challenges and recent results related to post-OFDM waveforms. This event will be a good opportunity to researchers and industrials, since the first draft of 5G standards are expected by the end of 2017.

The topics of interest of this session are:

- Comparative analysis of post-OFDM waveforms for 5G,
- Robustness of post-OFDM waveforms for asynchronous 5G systems,
- Study of low complexity and low latency multicarrier modulations for 5G,
- Energy and spectral efficient 5G waveforms,
- Post-OFDM waveforms & MIMO techniques,
- Implementation, measurements and demonstrators for 5G waveforms.

Keywords: 5G waveforms, OFDM, FBMC/OQAM, UFMC, GFDM, WOLA, Filtered OFDM, latency, spectral efficiency, hardware implementation complexity, asynchronous, MIMO.

Submission Guidelines

Prospective authors are invited to submit high-quality technical papers (max 6 pages) using standard IEEE conference templates that can be downloaded from the link http://iswcs2017.org/call-for-papers/. The proposal should be submitted by the deadline, via the EDAS link: https://edas.info/newPaper.php?c=23468&track=85447

Key Dates

- Paper submission: Thursday, May 4, 2017
- Acceptance notification: Friday, June 16, 2017

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