CALL FOR PAPERS

IEEE JSAC Special Issue on Energy-Efficient Techniques for 5G Wireless Communication Systems

One of the most urgent and critical challenges in the design of 5G wireless communication systems is that of mitigating their energy consumption in light of a greatly increased data rate. Indeed while it has now been some years that the topic of energy-efficient design of communication networks has gained a prominent role, due to both economic reasons and environmental concerns on sustainable growth, it is expected that in the 5G era, with millions more base stations and billions of connected devices, this topic will be even more compelling. Given the required 1000x increase in offered data rates and throughput with respect to current state-of-the-art technology, the network energy efficiency must be improved by at least the same factor, in order to keep the energy consumption at today’s level. This special issue will address research advances that are instrumental in a 1000x capacity improvement with respect to currently deployed wireless networks, while achieving at the same time increased energy efficiency levels. We solicit high-quality original research papers on the energy-efficient (green) design of future 5G wireless communication systems, including but not limited to the following topics:

- Green multiple access/modulation schemes beyond OFDMA
- Energy-efficient design and assessment of mmWave communications
- Energy-aware design for small cells and HetNets (inc. WiFi integration)
- Energy efficiency aspects of Cloud RAN and other highly novel cooperative techniques
- Energy saving potential of local caching
- Green massive MIMO techniques
- Green backhauling and network deployment architectures

In addition to technical research results, we invite very high quality submissions of a tutorial or overview nature; we also welcome creative papers outside of the areas enumerated here but related to the overall scope of the special issue. Prospective authors can contact the Guest Editors to ascertain interest on topics that are not listed.

Submission Guideline

Authors should refer to the submission rules specified in the “Information for Authors” section of the JSAC guidelines (www.jsac.ucsd.edu/Guidelines/info.html) to prepare their papers. Papers should be submitted through EDAS (http://www.edas.info) according to the following schedule:

- Manuscript submission: April 1, 2015
- Notification: July 15, 2015
- First revision due: September 5, 2015
- Final notification: October 5, 2015
- Final material sent to IEEE: October 31, 2015
- Publication date: 1st quarter, 2016

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