IEEE ICC 2015 Workshop on Massive Uncoordinated Access Protocols (MASSAP)

Call for Papers

Uncoordinated Multiple-Access Protocols, with Random Access Protocols as the best-known class of such protocols, represent a key element of wired and wireless communications systems where a potentially large population of users needs to transmit over a shared communication medium. The role of access protocols is especially relevant for systems that feature sporadic and unpredictable access activity, and/or support delay-critical applications, such as interactive satellite communications, real-time machine-type communication, etc. While traditional random access protocols treat collisions as a waste and therefore are designed to avoid them, in recent years several innovative developments have been proposed, such as physical layer network coding and various techniques based on successive interference cancellation (SIC), where interference is instead embraced and creatively utilized. These developments have opened a completely new perspective in uncoordinated protocols, paving the way to dramatic performance improvements, and rendering the throughput of random access channels competitive with respect to that of typical coordinated protocols. Besides the performance improvement, these new approaches created a new conceptual relation with error control codes, thereby opening fundamentally new problems for two rather separated research communities. Finally, low-complexity spectral-efficient random access protocols may completely change the way scheduled and random access are supported in future standards. The goal of this workshop is to stimulate new contributions to the topic, with emphasis on cross-layer interactions between the MAC and PHY layers of the protocol stack, as well as on the connections to coding theory. Topics of interest include, but are not limited to:

- Fundamental limits on random access protocols with interference cancellation
- Network coding and physical-layer network coding in multiple access schemes
- Joint multiuser detection
- Cooperative access protocols
- Signal processing for successive interference cancellation
- Wireless access protocols for massive M2M communications
- Wireless access protocols for massive IoT
- Innovative techniques for 5G radio access networks
- Random access with spatial diversity
- Access protocols for large-scale wireless sensor networks
- Random access protocols for real-time applications
- Energy efficient MAC-PHY spatial processing
- Wireless access protocols for vehicular networks
- Algorithms and protocols for Cloud Radio Access Networks (C-RAN)

Workshop Chairs

Federico Boccardi, Vodafone UK
Anthony Ephremides, Univ. of Maryland
Andrea Munari, RWTH University Aachen
Enrico Paolini, University of Bologna
Christian Shlegel, Dalhousie University
Michele Zorzi, University of Padova

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Branka Vucetic, University of Sydney
Dejan Vukobratovic, University of Novi Sad
Hiroyuki Yomo, Kansai University
Andrea Zanella, University of Padova

The IEEE ICC MASSAP 2015 will feature keynote speeches by Petar Popovski (Aalborg University) and Gerhard Wunder (Fraunhofer Heinrich-Hertz-Institut). The workshop accepts only novel, previously unpublished papers. All submissions should be written in English with a maximum paper length of six (6) printed pages (10-point font) including figures. Accepted papers will be submitted for inclusion in IEEE Xplore/IEEE Digital Library, provided they are covered by one registration and they are presented at the workshop.

Important dates: Full paper submissions: Jan. 31, 2015. Notification of acceptance: Feb. 14, 2015. Final manuscript: Feb. 28, 2015.