

IEEE ICC 2014 Workshop on Small Cell and 5G Networks (SmallNets)

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Call for Paper

The ever-increasing need for higher data rates and multimedia services leads to stringent requirements on the bit rate/km² that next-generation cellular wireless networks are expected to deliver. This increasing trend has urged mobile operators to examine new ways for improving their coverage, boosting their network's capacity, and lowering their capital and operating expenditures (CAPEX and OPEX). A promising approach to solving this problem is through the deployment of Small Cell Networks (SCNs). SCNs represent a novel networking paradigm based on the idea of deploying short-range, low-power, and low-cost base stations operating in conjunction with the main macro-cellular network infrastructure. This includes a number of small cells that include femtocells, picocells, metrocells, and microcells – broadly varying in size and capabilities from the smallest to the largest. The use of SCNs is envisioned to constitute a major technology in next-generation 5G networks that are able to provide high data rates, allow offloading traffic from the macro cell, and provide dedicated capacity to homes, enterprises, or urban hotspots. SCNs are also expected to pave the way for a plethora of new wireless services and application scenarios.

Building on the success of its first and second editions, held in conjunction of ICC 2012/2013 in Ottawa/Budapest, this workshop is expected to bring together leading academic and industrial researchers in an effort to identify and discuss the major technical challenges and recent results related to small cell networks. Topics of interest include but are not limited to the following:

- Interference analysis, avoidance, and mitigation.
- Power control and power saving mechanisms.
- Mobility management and load balancing for small cells
- Decoupled control- and user-plane transmissions (soft-cell, phantom-cell, etc)
- Carrier aggregation (single and multi-flow) in small cells
- New small cell based 5G network architectures
- Multi-point transmission (CoMP, JT, DCS) techniques in small cells
- Cognitive radio techniques for small cell networks.
- Game theoretical techniques for small cell deployment.
- Dynamic TDD, Device-to-Device, etc
- Context aware small cells (caching, predictive RRM, etc)
- New backhaul architectures (e.g., wireless backhaul, millimeter wave)
- Open and closed access operation modes
- Self-organization, -configuration, -optimization, and -healing mechanisms for SCNs.
- Multi-RAT (2G/3G/4G/WiFi) coexistence.

The IEEE ICC SmallNets 2014 will feature Prof. **Jeffrey Andrews** (Univ. of Texas, Austin, USA), Prof. **Dong In Kim** (Sungkyunkwan Univ., Korea), and Dr. **Erik Dahlmann** (Ericsson Research, Sweden). In addition a panel addressing the challenges of small cell deployments and 5G networks will be organized. 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 (minimum 10-point font) including figures, without incurring additional page charges (see <http://www.ieee-icc.org/2014/authguide.html>)

Important Dates

Paper Submission: **31 December 2013**

Acc. Notification: 20 February 2014

Camera Ready: 15 March 2014

Workshop: 10 June 2014