

# WIRELESS PERSONAL COMMUNICATIONS

Call For Papers for  
Special Issue on

## Context-Aware Communications and Networking – an Important Paradigm for 5G Networks

### Overview

The rapid development of communication networks has elevated the importance of reliable access to additional information about the radio environment and the precise characteristics of the deployment environment and network status. For many years the knowledge about the current status of the communication channel, known as, e.g., Channel State Information (CSI), has been used for link adaptation purposes, such as power and bit allocation algorithms. Moreover, access to CSI and devices' locations has driven the development of applications for advanced radio resource and interference management. In both cases, however, the following trade-off can be observed: the more detailed the information, the greater the amount of information that needs to be exchanged. This problem is even more crucial in some contexts, such as MIMO/MIMO-OFDM systems where precoding schemes have to rely, in general, on the information of the channel for each carrier and antenna. Furthermore, numerous applications are strongly dependent on the fast and reliable access to updated data, that can be either related to channel measurements or to other user- or network-related information. These include coordinated solutions such as Coordinated Multi-Point (CoMP) transmission and reception, applications of the mobile small-cells concept, self-organizing networks (SON), convergence between the 3GPP and non-3GPP networks for traffic offloading, development of various spectrum sharing strategies and/or cognitive radio solutions, direct communication approaches, or enhanced car-to-car or car-to-infrastructure communication.

Various researchers have concentrated on the benefits that can be achieved by exploiting the presence of rich context information. As the advantages of such approach can be easily foreseen, the drawbacks can also be noted, including wireless security or reliability and accuracy of the stored data. All of these aspects have to be considered in developing new solutions that take advantages of the additional information.

Another issue is created by more and more challenging expectations of the end-users, just to mention the need for detailed localization information both indoors and outdoors, for data and multimedia delivery every time and everywhere, rapid file sharing in the form of cellular broadcasting, wireless car video, etc. All of these possible future applications will require reliable access to various sources of context information. This is also related to the further increase of back-haul traffic that is exchanged within the network or stored in cloud databases

The goal of this special issue is to concentrate on all aspects and future research directions related to context-aware communications.

### Scope

Original papers are solicited on topics of interest that include, but are not limited to:

- Architectures for context-aware communication and networking (CACN)
- Information theory aspects of context-aware networking

- The role of rich context information in interference and radio resource management
- CACN solutions for dense heterogeneous wireless networks
- Front- and back-haul issues for context-aware networks
- Carrier aggregation and coordinated solutions for CACN
- Routing in CACN
- Security aspects in CACN
- 3GPP and non-3GPP convergence, including traffic offloading
- Context-aware communications for SON
- Context-aware communications for D2D communications (e.g., LTE-direct, WiFi-direct)
- The role of context information in cognitive radio and networks
- Spectrum sharing strategies in future networks
- Context information in car communications
- Context information in public service systems
- Big-data processing in CACN
- The role of databases (e.g., REMs) in future (5G) networks

### **Submission procedure:**

All papers have to be submitted using the following link and instructions presented on the target web-page:

[www.editorialmanager.com/wire](http://www.editorialmanager.com/wire)

### **Review and publication:**

Only high quality papers with strongly positive reviews will be finally accepted for publication.

All accepted papers will be published in form of a bunch of papers with the dedicated Editorial.

### **Dates:**

Submission deadline: 15 September 2015, 23.59 UTC

First Round of Reviews: 15 February 2016

Final notification of acceptance: 15 March 2016

Delivery of camera ready paper: 31 March 2016

### **Guest Editors:**

- Dr Adrian Kliks, Poznan University of Technology, Poland, [akliks@et.put.poznan.pl](mailto:akliks@et.put.poznan.pl) (Lead Guest editor)
- Dr. Nikos Dimitriou, National Centre for Scientific Research "Demokritos", Greece, [nikodim@iit.demokritos.gr](mailto:nikodim@iit.demokritos.gr)

- Dr Oliver Holland, King's College London, UK, oliver.holland@kcl.ac.uk

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