

## Welcome Message from Editor-in-Chief

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Received on 18 June 2014, Published 14 07 2014

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doi: 10.4108/cogcom.1.1.e1

It is our great honour to introduce the inaugural issue of EAI Transactions on Cognitive Communications. It has been more than one decade since the creation of the cognitive radio concept. The research and development of cognitive communications have then been sparked. Now the new era of communications is coming. The year of 2014 will witness the beginning of the 5G era. It is the year where cognitive communications meet real applications. We hope our new released Transactions will contribute to this new development.

The first issue of the Transactions includes four well selected papers. All of them are related to spectrum sensing, a key enabling technique in cognitive radio. We believe spectrum sensing techniques will play an important role in future wireless network.

In the first paper, Yang et al, proposed a data fusion based sensing framework to detect primary users based on single-carrier frequency division multiple access (SC-FDMA). The main contribution of the paper is to encode sensing results by a novel frequency-hopping M-ary modulation scheme back to the fusion centre.

The second paper studied the stability of queues in primary and secondary users under random spectrum sensing and random channel access of secondary users. Shafie showed in this paper, by optimizing sensing and channel access time, secondary users can enhance the throughput while guaranteeing the quality of service (QoS) of primary users.

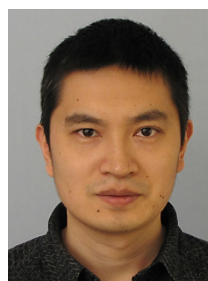
The third paper by Shan et al. looked into the multiple channel wireless microphone user emulation attack problem in the TV white space. They proposed the cross-correlation based detection solution based on low complexity FM demodulator to detect emulated signals at low signal to noise ratio (SNR) region. The proposed solution was verified by the hardware prototype.

The fourth paper by Zhou et al. investigated the cooperative sensing in IEEE P802.22b based wireless regional area network (WRAN). It proposed a cooperative spectrum sensing framework and energy/bandwidth saving sensing scheme for two-hop

WRAN, and showed 40% of energy/bandwidth saving in simulation.

We hope you enjoy our first issue. We would like to take this opportunity to thanks all authors, reviewers and editors for their solid contribution to the development of the journal. Our second issue is well on the schedule, planned in this September. I hope you will come back and check regularly our journal. Together with you, we will make our contribution to the development of cognitive communications.

### About the Editors-in-Chief



Dr. Tao Chen, received B.S. degree from Beijing University of Posts and Telecommunications, Beijing, China in 1996 and Ph.D. degree from University of Trento, Italy in 2007. He joined VTT, Finland, in 2008, and currently he is a senior researcher at the group of Radio Systems. He has been the TPC co-chair of ISCIT 2011 and served as the TPC member in a variety of international conferences, e.g. IEEE GLOBECOM, ICC and WCNC, PIMRC, CROWCOM, and etc. His current research interests include energy efficiency in small cell networks, radio resource management and MAC protocol design in cognitive radio, cross layer design and analysis in heterogeneous wireless networks and architecture design in software defined wireless networks. He is a senior member of IEEE.