ACM/Springer Mobile Networks and Applications (MONET)
Special Issue on
"Cognitive Radio Oriented Wireless Networks and Communications"

Access to the radio spectrum is presently either regulated via license (where the rights to use specific spectral bands are granted exclusively to an individual operator) or completely unlicensed (where certain spectral bands are declared open for free use by any operator or individual following specific rules). While these paradigms have allowed the wireless communications sector to blossom in the past, there is much research progress recently on the so-called "cognitive radio" (CR) paradigm, wherein spectrum may be efficiently shared in a more flexible fashion by a number of operators, users, and systems. CR can be thus viewed as an enabling technology that will benefit several types of players. In some sense, CR introduces new communications and networking models for the whole wireless world, creating better business opportunities for the incumbent operators and new technical dimensions for smaller operators, and enabling more efficient approach regarding spectrum usage in next generation wireless networks.

The purpose of this special issue is to disseminate state-of-the-art approaches and novel technologies that will advance basic knowledge and understanding of cognitive radio oriented wireless communications and networks. We are interested in soliciting papers that address the various aspects of cognitive wireless systems and technologies, including a broad range of communications, networking and implementation issues. Possible topics include, but are not limited to:

- Wide-band spectrum sensing
- Interference metrics and measurement
- Multi-band, spectrum-agile and adaptive radio transceivers
- Radio resource management and dynamic spectrum sharing
- Cross-layer cognitive algorithms
- Bio and AI-inspired algorithms
- Wireless network co-existence
- Ultra-Wideband cognitive radio systems
- Platforms and hardware implementation for the support of cognitive radio
- Radio access protocols and algorithms for the PHY, MAC, and Network layers
- Linear network coding, cooperative coding and MIMO techniques for cognitive radio
- Simulation, modeling and analysis of cognitive wireless networks
- Self-organizing mesh networks and autonomic communications
- Test-bed and experimental prototypes
- Trust and security mechanisms
- Policies, economics and standardization for cognitive spectrum access

Publication Schedule:

- Manuscript Due: February 1, 2007
- Acceptance Notification: August 15, 2007
- Final Manuscript Due: September 15, 2007
- Publication Date: First quarter, 2008

Submission Guidelines:

Only original research papers will be considered. Submission should be limited to 25 double space pages. Prospective authors should submit, via email, their manuscript as a PDF file to Prof. Thomas Hou (thou@vt.edu) according to the publication schedule.

Guest Editors:

Thomas Hou
The Bradley Dept. of Electrical
and Computer Engineering
Virginia Tech
Blacksburg, VA, USA
Email: thou@vt.edu

Alexander M. Wyglinski
Information and Telecommunication Technology Center
The University of Kansas
Lawrence, Kansas, USA
Email: alexw@ittc.ku.edu

Maziar Nekovee
BT Research
Martlesham, Suffolk, UK
Email: maziardotnekovee@bt.com

Honggang Zhang
Create-Net
Trento, Italy
Email: honggang.zhang@create-net.org

Rajarathnam Chandramouli
Stevens Institute of Technology
Hoboken, NJ, USA
Email: mouli@stevens.edu

Frederick Martin
Motorola, USA
Email: F.Martin@motorola.com