Call for Papers

IEEE Communications Magazine

Feature Topic on

Cognitive Radios for Dynamic Spectrum Access

With the demand for additional bandwidth increasing due to both existing and new services, spectrum policy makers and communication technologists are seeking solutions for this apparent spectrum scarcity. Meanwhile, measurement studies have shown that licensed spectrum is relatively unused across time and frequency. To provide the necessary bandwidth, a critical rethinking of the spectrum regulatory requirements is essential. The Federal Communications Commission (FCC) has already commenced work on the concept of unlicensed users "borrowing" spectrum from spectrum licensees, known as *dynamic spectrum access* (DSA). To enable DSA networks, the use of *cognitive radio* technology is being considered due to its ability to rapidly and autonomously adapt operating parameters to changing requirements and conditions. Furthermore, cognitive radios are capable of performing a multitude of functions to support operations within DSA networks, such as wide-band spectrum sensing, real-time spectrum allocation and acquisition, and infrastructure-less mesh networking. Of course, incumbent license rights must also be respected. While deployment of cognitive radio is sensitive to technical, regulatory, and practical considerations, it is believed that recent developments in cognitive radio allow for systems that can respect the rights of incumbent license holders while providing additional flexibility and access to spectrum. Given the obvious interplay between spectrum policy and cognitive radios, there is high and increasing interest from members of both the spectrum policy and communications technology communities to converge on this issue and find viable wireless solutions capable of fueling the future of wireless communications and networks. The goal of this proposed feature topic is to provide all members of the communications technology and spectrum policy communities insight into the activities currently underway in the areas of cognitive radios and DSA from the perspectives of the communication technologists in both industry and academia, as well as governmental spectrum policy makers.

Scope of Contributions

Papers are solicited in, although not limited to, the following areas:

- Cognitive Radio Test-Beds and Hardware Prototypes
- Agile Transmission Techniques enabling DSA Networks (e.g. NC-OFDM, UWB)
- Dynamic Network Architectures and Protocols
- Spectrum Sensing and Awareness Methods
- Accreditation, Trust, & Security Mechanisms for DSA Networks
- DSA Management Techniques
- Experiences with Cognitive Radios/DSA Networks
- Infrastructure-Less and Coordinated DSA Networks
- Cognitive Artificial Intelligence Engines (e.g. neural networks, genetic algorithms)
- Applications of Cognitive Radio (e.g. public safety, cellular access networks)
- Government and Industry Roles in Standardization
- Spectrum Sharing and Regulation
- DSA/Cognitive Radio Standardization Activities (e.g. IEEE P1900, IEEE 802.22)

Submission

Articles should be **tutorial** in nature, with the intended audience being all members of the communications technology and spectrum policy communities. They should be written in a style comprehensible to readers outside the specialty of the article. Articles should not exceed 4500 words. Figures and tables should be limited to a combined total of six. Complete guidelines for prospective authors can be found at: http://www.comsoc.org/pubs/commag/sub_guidelines.html. Please submit a PDF (preferred) or MSWORD formatted paper by October 1, 2006 via Manuscript Central (http://commag-ieee.manuscriptcentral.com). Register or log in, and go to the Author Center. Follow the instructions there. Select the topic "May 2007/Cognitive Radios for Dynamic Spectrum Access."

Schedule for Submissions:

Submission Deadline:	**October 1, 2006**	Final Manuscript Due:	March 1, 2007
Notification of Acceptance:	January 15, 2007	Publication Date:	May 1, 2007

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