

Invited Speaker: Dr. Ian F. Akyildiz



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Cooperative Spectrum Sensing in Cognitive Radio Networks

Abstract: Cooperative spectrum sensing and sharing framework is presented as an effective approach to improve the performance of cognitive radio (CR) networks over the non-cooperative counterpart. Specifically, cooperative sensing enhances the licensed user detection probability while cooperative sharing optimizes spectrum utilization among cognitive radio users. However, several essential factors, such as spatially correlated shadowing, the increase of control traffic under bandwidth constraints, and the incurred delay, contribute to cooperation overhead and pose several significant research challenges. In this talk, existing cooperative spectrum sensing and spectrum sharing solutions are presented and future research challenges are highlighted.

Biography

IAN F. AKYILDIZ received his BS, MS, and PhD degrees in Computer Engineering

from the University of Erlangen-Nuernberg, Germany, in 1978, 1981 and 1984, respectively. Currently, he is the Ken Byers Distinguished Chair Professor with the School of Electrical and Computer Engineering, Georgia Institute of Technology, Director of Broadband Wireless Networking Laboratory, Chair of the Telecommunication Group at Georgia Tech. Dr. Akyildiz is an Honorary Professor with School of Electrical Engineering at the Universitat Politecnica de Catalunya, and Director of N3Cat (NaNoNetworking Center in Catalunya) in Barcelona, Spain, since June 2008. He is also an Honorary Professor with University of Pretoria, South Africa since March 2009 and a Visiting Professor with King Saud University in Saudi Arabia since January 2010. He is the Editor-in-Chief of Computer Networks (Elsevier) Journal, the founding Editor-in-Chief of the Ad Hoc Networks Journal (Elsevier) launched in 2003, of the Physical Communication (PHYCOM) Journal (Elsevier) launched in 2008 and of the Nano Communication Networks (NanoComnet) Journal (Elsevier) in launched 2010. Dr. Akyildiz serves on the advisory boards of several research centers, journals, conferences and publication companies.. Dr. Akyildiz is an IEEE FELLOW (1996) and an ACM FELLOW (1997). He received numerous awards from IEEE and ACM. His current research interests are in Cognitive Radio Networks, Wireless Sensor Networks, Wireless Mesh Networks, Nanonetworks.

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