



Fall 2011 Colloquium

Temple University

Computer and Information Sciences

Cognitive Radio & Networks in Intelligent Vehicle Systems (IVS) and High Speed Rail (HSR) Applications: Challenges and Opportunities

Distinguished Speaker

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Friday 12/16, 11am, Wachman 447

Abstract: With the recent advance in Cognitive Radio, the use of wireless spectrum is getting more and more efficient. Each vehicle (or high-speed rail train) will become a unique moving-node in the entire global communications network. Many new telematics services could be offered through these emerging technologies. The networks infrastructure will support more economic and effective interactions between the automobiles (or the HSR trains) and also with the surrounding environment, through both wireless access and wireline based networking infrastructure. Those potential services and applications include safety, health and status of the automobile (or HSR train), location-based user services, passenger entertainment, and more efficient use of the transportation, wireless spectrum and communications infrastructure. The speakers will present their view on the potential challenges and opportunities of using cognitive radio in Intelligent Vehicle Systems (IVS) and High Speed Rail (HSR) Train applications during this talk. This talk will address how such a vast service and network systems can be scaled, supported, made reliably and economically. Important issues such as the maturity of the technology, the value of the services performed, the complex regulatory regime and standards, the adequate business models and rationale for creating such networks will be presented.

Bio: **Dr. T. Russell Hsing** is a Fellow of the IEEE, British Computer Society (BCS) in UK, and the SPIE-The Internal Society for Optical Engineering. He is now an Executive Director to manage and lead the Emerging Technologies and Services Research Department at Telcordia Technologies (formerly Bellcore). He is also supervising Directors for the Telcordia Applied Research Center in Poland (TARC-PL) and Taiwan (TARCTW). Currently he is an adjunct Professor of the Electrical Engineering Department at the Arizona State University, a Member of the Scientific Advisory Board for the Institute of Networks Coding at the Chinese University of Hong Kong, and a Guest Professor at the Peking University in China. He is also the Chair of the Fellow Evaluation Committee (term 2010-2011), a member of the Award Committee (2011-2013), and a member of the Nominations and Elections Committee (2008-2010) for the IEEE Communications Society. He will be a member of the IEEE Fellow Committee in 2012. He has been a co-Editor-in-Chief of the ICT Book Series for the John Wiley & Sons Publications, Inc. since 2007. Dr. Hsing graduated from National Chiao-Tung University (Taiwan) in 1970, and got his M.S. and Ph.D from the Electrical Engineering Department of the University of Rhode Island in 1974, and 1977. He has finished Executive Courses from the Stanford Business Graduate School, MIT Sloan School, and the University of Texas at Austin from 1995 through 2000.

