

## Special Session Proposal – EMC 2012

### **Title: Evolving Trends in Spectrum Management and Engineering,**

**Abstract:** The Special Session, “Spectrum Management and Engineering, Evolving Trends”, provides a forum to inform the Electromagnetic Compatibility community and others on current research and development efforts to better manage, control and quantify spectrum occupancy.

**Format:** Special Session, Half-day

**Chairpersons:** Larry Cohen and Bob Johnk

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**Description:** The Special Session will present methodologies and measurement techniques to better manage, control and quantify the use of spectrum. The session will consist of a short introduction followed by five talks covering various aspect of spectrum management. The objective is threefold. The first goal is to inform on measurement and regulatory compliance strategies and techniques that more accurately and effectively quantify spectrum occupancy by RF systems in a congested electromagnetic spectral environment. The novelty of this special session is that it offers potential solutions to a growing number of spectrum related problems faced by EMC engineers and technologists. The second goal is to showcase a variety of measurement systems and techniques that are used to study and quantify spectrum issues. The third goal is to present some of the latest research into the design of components, such as power amplifiers, waveforms and filters that promote more optimum use and cohabitation of the electromagnetic spectrum by wireless and radar systems.

### **Prospective speakers and proposed topics:**

1) ***Introduction*** (5 minutes)

Larry Cohen and Bob Johnk, Naval Research Laboratory and Institute for Telecommunication Sciences (NTIA/ITS)

***Spectrum Survey Algorithms*** (25 minutes)

2) Heather Ottke, Institute for Telecommunication Sciences (NTIA/ITS), Boulder, CO, [hottke@its.blrdoc.gov](mailto:hottke@its.blrdoc.gov), (303) 497-6753

Presentation will focus on measurement and data processing techniques to characterize the radio spectrum

3) *Radar Emissions Spectrum and Control* (25 minutes)

Larry Cohen, Naval Research Laboratory, Washington D.C.,  
[lawrence.cohen@NRL.navy.mil](mailto:lawrence.cohen@NRL.navy.mil) , (202) 404-7726

Presentation will discuss how to design RF power amplifiers for lower spurious emissions and improved spectral control

4) *Polarimetric Spectrum Surveys* (25 minutes)

J. Wayne Allen, Institute for Telecommunication Sciences (NTIA/ITS), Boulder, CO,  
[wallen@its.blrdoc.gov](mailto:wallen@its.blrdoc.gov), (303) 497-5871

Presentation will discuss a proposed methodology for high-fidelity spectrum measurements using a three-polarization antenna system

5) *WiMAX to Radar Interference* (25 minutes)

Frank Sanders, Institute for Telecommunication Sciences (NTIA/ITS), Boulder, CO,  
[fsanders@its.blrdoc.gov](mailto:fsanders@its.blrdoc.gov), (303) 497-7600

Presentation will discuss measurement techniques and the impact of WiMAX interference to incumbent radar systems

6) *A Fast-Fading Propagation Measurement System* (25 minutes)

Bob Johnk, Institute for Telecommunication Sciences (NTIA/ITS), Boulder, CO,  
[bjohnk@its.blrdoc.gov](mailto:bjohnk@its.blrdoc.gov), (303) 497-3737

Presentation will describe the development of a narrow-band fast fading measurement system and measurement results.

**Target Audience:** The target audience is both EMC and non-EMC engineers who currently, or will be in the future, involved in the design, development, fabrication, installation, testing, and management of wireless devices, systems and networks.

**Sponsoring TC:** The most suitable sponsoring technical committee for this Special Session is TC-6: Spectrum Management.