PUBLIC NOTICE

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Tutorial on Feature Detection and Listen-Before-Talk Systems

The FCC's Office of Engineering and Technology is sponsoring a tutorial on "Feature Detection and Listen-Before-Talk Systems" on February 12, 2003 from 10:00 a.m. to 12:00 noon in the Commission Meeting Room (TW-C305), 445 12th Street S.W., Washington, D.C.

Dr. John W. Betz, Director of Special Programs at the MITRE Corporation will present an overview of feature detection and its possible application in unlicensed systems. It has been suggested that unlicensed transmitters seeking to share spectrum with digital television could use such feature detectors to determine if a channel is being used, supporting a "listen-before-talk" mode of spectrum sharing. Many digital modulations, such as DTV, exhibit periodic statistics, also known as cyclostationarity. The periodic statistics, or cyclostationary features, can sometimes be detected even when the signal-to-noise ratio is lower than needed to demodulate the signal. This presentation describes the theory and practice of cyclostationary feature detection. It outlines relevant characteristics of cyclostationary processes, describes signal processing approaches for detecting cyclostationarity, and provides performance results. Expressions and numerical results are given for both optimal and suboptimal feature detectors, showing detector integration times needed for reliable detection at different input signal-to-noise ratios. In addition, robustness of these detectors to different real-world effects is discussed.

The public is invited to attend, no pre-registration is needed. For further information, contact Mike Marcus at (202) 418-2418, mmarcus@fcc.gov, or Young Carlson at (202) 418-2427, ycarlson@fcc.gov.

The audio portion of this tutorial will be broadcast live on the Internet via the FCC's Internet audio broadcast home page at www.fcc.gov/realaudio. Videotape of the tutorial may also be purchased from the FCC contractor, CACI Productions Group (formerly InFocus), 341 Victory Drive, Herndon, VA 20170, by calling at (703) 834-1470.

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