

Spectrum Policy & Regulation for Innovative Wireless Engineers

Abstract:

National and international spectrum policy issues are key factors in the practical implementation of innovative wireless technology as spectrum access is highly regulated in all countries. This presentation will review what an engineer working on cutting edge issues needs to know about what is permitted, what may be permitted, and how to push the boundaries of spectrum policy to enable new technology. In practice, spectrum regulatory issues are just as real as Maxwell's Equations for the design of wireless systems. However, unlike Maxwell's Equations national and international spectrum regulations change with time and with adequate lead time and planning can evolve to support innovative technology. The focus will be on US national policy for both private sector use and federal government use. The speaker is a retired FCC senior manager who successfully proposed and managed new policies that resulted in Wi-Fi, Bluetooth, and 60 GHz systems.

Bio:

Michael Marcus is a native of Boston and received SB and ScD degrees in electrical engineering from MIT. Prior to joining the FCC in 1979, he worked at Bell Labs on the theory of telephone switching, served in the Air Force where he was involved in underground nuclear test detection research, and analyzed electronic warfare issues at the Institute for Defense Analyses.

At FCC his work focused on proposing and developing policies for cutting edge radio technologies such as spread spectrum/CDMA and millimeter waves. WiFi is one outcome of his early leadership. He also participated in complex spectrum sharing policy formulation involving rulemakings such as ultrawideband and MVDDS. Awarded a Mike Mansfield Fellowship in 1997, he studied the Japanese language and spent a year at the FCC's Japanese counterpart.

He retired from FCC in March 2004 after servicing a senior technical advisor to the Spectrum Policy Task Force and codirecting the preparation of the FCC's cognitive radio rulemaking. Immediately after retirement he lived in Paris France for 3 years, consulting for US and European clients. In 2006 he was appointed Special Advisor to Mrs. Viviane Reding, European Commissioner for Information Society & Media.

He is now Director of Marcus Spectrum Solutions LLC, an independent consulting firm based in the Washington DC area and focusing on wireless technology and policy. He has been recognized as a Fellow of the IEEE "for leadership in the development of spectrum management policies" and received IEEE-USA's first Electrotechnology Transfer Award (1994) "For his pioneering work in the conception, drafting, and enactment of the Federal regulations that legalized commercial spread spectrum radio under FCC Part 15, the rules governing unlicensed devices; thus spawning a multimillion dollar, worldwide, wireless industry."