

News Update on Standards and Regulations

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Industry standards and government regulations have a major impact on the design, performance, and marketability of all electronic products. At the lowest level, regulations such as FCC Part 15 and EU Directive 2004/108/EC govern interference and other electromagnetic compatibility issues. Electrical safety requirements should also be considered part of the baseline regulation of electronic equipment.

But as former FCC Associate Chief for Technology Mike Marcus noted in a 2004 presentation, "Wireless is Different!" [1]. Marcus explains that standards and regulations for wireless products address basic technical, business and public policy issues:

- Spectrum is a shared resource
- The unregulated early years of radio technology led to chaos, and monopolistic behavior by the first wireless companies raised many concerns
- Wireless systems often have a role in public safety
- Compatibility of units among various owners can increase the economic value of a product

With these basic principles in mind, the following are various recent news items concerning standards and regulations.

FCC Personnel Announcements for the National Broadband Plan

The American Recovery and Reinvestment Act of 2009 directed the FCC to submit a National Broadband Plan to Congress by February 17, 2010, that addresses broadband deployment, adoption, affordability, and the use of broadband to advance solutions to national priorities. The senior technologists helping develop this plan are:

Stagg Newman, Chief Technologist. Dr. Newman was a Principal with Pisgah Comm Consulting, and was Chief Technology Officer and a founder of Frontline Wireless and a senior telecommunications expert for McKinsey and Company. Prior to that, he served as the FCC's Chief Technologist. He earned a PhD and MS in Mathematics from Cornell University, and a BS in Mathematics from Davidson College.

Byron J. Neal, Chief Engineer. Mr. Neal is an engineer and manager with over 15 years of network engineering experience in the telecom industry. He was Director of Syniverse Technologies; Vice President, Network Engineering, for Trinsic Communications; Regional Manager, Customer Engineering, for 2nd Century Communica-

tions; Network Design Manager for Intermedia Communications, and Telecommunications Engineer for Transglobal Communications. He earned a BSEE from the West Virginia University Institute of Technology.

Julius Knapp, Chief, Office of Engineering and Technology, FCC. Mr. Knapp has been with the FCC for 35 years, having previously served as the Deputy Chief of OET, and other management positions, including Chief of the FCC Laboratory. He was instrumental in adoption of the FCC's provisions for unlicensed technologies such as Wi-Fi, Bluetooth, Zigbee, Ultra-Wideband, power line communications and TV White Space devices. Mr. Knapp received a Bachelor's degree in electrical engineering from the City College of New York in 1974.

Rashmi Doshi, Chief, Laboratory Division, Office of Engineering and Technology, FCC. Dr. Doshi is currently the Chief of the Laboratory Division in the Office of Engineering and Technology. He is responsible for managing the FCC's laboratory staff in leading the evaluation of new technologies and the development of measurement procedures for RF compliance in support of the major policy initiatives at the FCC. He also manages the FCC's Equipment Authorization program. Mr. Doshi holds a B.Sc. degree from University of London and a PhD in Electronics from University of Southampton, England.

Jeff Goldthorp, Chief, Communications Systems Analysis Division, Public Safety and Homeland Security Bureau, FCC. Mr. Goldthorp leads a technical staff in the analysis of communications systems reliability and security, including the collection and analysis of communications network outage data, establishing statistically meaningful portraits of communications network reliability, and working with industry to facilitate improvements to reliability and security. Mr. Goldthorp earned a BSEE from Lehigh University and an MSEE from Princeton University.

Walter Johnston, Chief, Electromagnetic Compatibility Division, Office of Engineering and Technology, FCC. Mr. Johnston is responsible for the evaluation of new technologies and services. He has served as CTO for several companies focused on data and VoIP services. He managed the trial of one of the original regional Internets that were connected to the NSFNET, the initial backbone of the modern Internet. He began his career with Bell Laboratories where he was responsible for design and development of a number of systems used for remote operations of the telephone network. He has a BSEE and an MS/CS both from Polytechnic Institute of New York.

Ronald T. Repasi, Deputy Chief of the Office of Engineering and Technology, FCC. Mr. Repasi has also served as the Satellite Engineering Branch Chief in the FCC's International Bureau, where he resolved orbit and spectrum sharing issues between competing satellite systems and managed the satellite network licensing process. He previously served as the Commission's Liaison to the Interdepartment Radio Advisory Committee (IRAC) and has represented the Commission as a delegate or spokesperson in various national and international committees, including the International Telecommunication Union (ITU). Mr. Repasi holds a BSEE degree from The George Washington University in Washington, D.C.

FCC Gathers Comments Related to Current Broadband Availability

In a Notice of Inquiry (NOI) adopted July 31, 2009, and released August 7, the FCC began the process of public notice and comments in matters triggered by the National Broadband Plan required by The American Recovery and Reinvestment Act of 2009. This notice was for a review of the procedures required in Section 706 of the Telecommunications Act of 1996, regarding an assessment of whether adequate broadband access was available to the public. After an extensive review of past work in the area, the NOI identified the specific questions to be addressed:

- (1) How should we define "advanced telecommunications capability" or "broadband"?
- (2) Is broadband available to all Americans?
- (3) Is the current level of broadband deployment reasonable and timely?
- (4) What actions, if any, should the Commission take to accelerate broadband deployment?
- (5) What actions should the Commission take to improve its regular broadband data collection efforts?

The notice provided a short comment period (comment date was September 4). Interested parties may now review the comments, with reply comments due by October 2, 2009.

FCC Announces Digital Licensing Application Dates for Low Power Television

To ensure continued service for viewers of low power television (LPTV) and TV translator stations in the rural portions of the United States, and to assist stations in these areas with their transition to digital, the FCC announced a rural digital filing opportunity for these services. Beginning August 25, 2009, the FCC will permit the filing of applications for new digital-only LPTV and TV translator stations in rural areas, for major changes to existing analog and digital LPTV and TV translator facilities in those areas, and, in the case of incumbent analog stations, for digital companion channels. No applications for new analog facilities will be accepted. This filing opportunity will be subject to a geographic restriction and to first-come, first-served processing. For a list of areas included, see news release DA

09-1487 dated June 29, 2009, at <http://www.fcc.gov>.

In addition, to further assist all LPTV and TV translator stations in their transition to digital, the FCC will begin accepting applications on a nationwide, first-come, first-served basis for new digital-only LPTV and TV translators stations, for major modifications to existing analog and digital stations in these services, and, in the case of incumbent analog stations, for digital companion channels, without geographic restriction, beginning on January 25, 2010. No applications for new analog facilities will be accepted.

60 GHz Wireless Association Formed

In May 2009, more than 15 technology companies formed the Wireless Gigabit (WiGig) Alliance, an organization formed to establish a unified specification for 60 GHz wireless technologies. The widespread availability and use of digital multimedia content is accelerating the need for faster wireless connectivity that current wireless standards cannot support. This has created demand for a single technology that can support instantaneous file transfers, wireless display and docking, and streaming high definition media on a variety of devices. WiGig Alliance is developing a 60 GHz wireless technology that provides the optimal way to connect consumer electronics, handheld devices and personal computers. The WiGig specification will allow devices to communicate at gigabit speeds within a typical room. The group's vision is to create a global "ecosystem" of interoperable products based on this specification, operating at speeds more than 10 times faster than today's wireless LANs.

Among the companies that comprise this industry-leading board of directors are: Atheros Communications, Inc., Broadcom Corporation, Dell, Inc., Intel Corporation, LG Electronics Inc., Marvell International LTD., MediaTek Inc., Microsoft Corporation, NEC Corporation, Nokia Corporation, Panasonic Corporation, Samsung Electronics Co. and Wilocity. WiGig Alliance members are defining a unified specification from the ground up, to address the specific requirements of various platforms, to coexist with future 60 GHz solutions and complement millions of Wi-Fi devices already in use around the world. The WiGig specification is expected to be available to member companies in Q4 of 2009. For information or to register as an adopter in advance of the final specification, visit: <http://wirelessgigabitalliance.org/specifications/>.

ISA100 Votes to Approve First Standard in Industrial Wireless Series

The International Society of Automation reports that the ISA100 Standards Committee on Wireless Systems for Automation has voted to approve a major new industry standard, ISA100.11a, "Wireless Systems for Industrial Automation: Process Control and Related Applications." The approval, by 81% of the voting mem-



bers of the committee, including 23 of the 24 end user members, follows two rounds of balloting and refinements to the document to reflect the excellent suggestions received from many interested parties.

Comments received in the latest voting will be reviewed for applicability by ISA100 co-chairs Pat Schweitzer of ExxonMobil and Wayne Manges of Oak Ridge National Laboratory. Other steps remaining in ISA's consensus-based standards development process include approval by the ISA Standards and Practices Board and ratification by the American National Standards Institute, of which ISA is an accredited member.

With over 600 members from around the world, ISA100 brings together wireless experts representing diverse industrial and technical interests in an open forum. The committee was established by ISA to address wireless manufacturing and control systems in areas including:

- The environment in which the wireless technology is deployed
- Technology and life cycle for wireless equipment and systems
- The application of wireless technology

The Committee's focus is to improve the confidence in, integrity of, and availability of components and systems used for manufacturing or control, and to provide criteria for procuring and implementing wireless technology in the control system environment. The ISA100.11a standard is intended to provide reliable and secure wireless operation for non-critical monitoring, alerting, supervisory control, open loop control, and closed loop control applications. The standard will define the protocol suite, system management, gateway, and security specifications for low-data-rate wireless connectivity with fixed, portable, and moving devices supporting very limited power consumption requirements. The application focus is to address the performance needs of applications such as monitoring and process control where latencies on the order of 100 ms can be tolerated, with optional behavior for shorter latency.

To meet the needs of industrial wireless users and operators, the ISA100.11a standard will provide robustness in the presence of interference found in harsh industrial environments and with legacy non-ISA100 compliant wireless systems. This standard addresses coexistence with other wireless devices anticipated in the industrial workspace, such as cell phones and devices based on IEEE 802.11x, IEEE 802.15x, IEEE 802.16x, and other relevant standards. Further, the standard allows for interoperability of ISA100 devices. This standard does not define or specify plant infrastructure or its security or performance characteristics. However, it is important that the security of the plant infrastructure be assured by the end user.

For more information on the full scope of ISA100 committee activity, visit <http://www.ISA100.org>.

Reference

1. Michael J. Marcus, "Wireless Communication Standards and Regulations," IEEE Phoenix Section Workshop 2004.