

News Update: Regulatory and Standards Activities

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FCC Announces Broadband Agenda

The Federal Communications Commission (www.fcc.gov) has announced an ambitious 2010 agenda for implementing key recommendations of the National Broadband Plan that involve rulemakings and other notice-and-comment proceedings. The Plan, which the FCC delivered to Congress on March 16, 2010, lays out a comprehensive strategy for connecting all corners of the nation while transforming the economy and society with the communications network of the future — robust, affordable, and high-speed Internet.

The 2010 Broadband Action Agenda announced today explains the purpose and timing of more than 60 rulemakings and other notice-and-comment proceedings the Plan recommends for FCC action. Executing these steps will accelerate deployment and adoption of robust, affordable broadband for all Americans, helping 100 million U.S. homes get affordable access to actual download speeds of at least 100 megabits over the next decade; promote innovation, investment, competition, and consumer interests throughout the broadband ecosystem; and advance the use of broadband for key national priorities, including public safety, health care, and education.

The top objective of the plan is to “promote world-leading mobile broadband infrastructure and innovation,” including making an additional 500 MHz of spectrum available for mobile broadband within the next 10 years, increasing opportunities for unlicensed devices and innovative spectrum access models, and expanding incentives and mechanisms to reallocate or repurpose spectrum to higher-valued uses.

The plan also seeks to accelerate universal broadband access and adoption, and advance national purposes such as education and health care. Also on the agenda is the advance of robust and secure public safety communications networks, including creation of a nationwide interoperable public safety wireless broadband network, promoting cybersecurity, and aiding in the transition to next-generation 911 and alerting systems.

TV White Space Study Group

The IEEE 802.19 Wireless Coexistence Working Group received approval in December 2009 for a new project, IEEE P802.19.1, to develop a standard for coexistence between wireless networks operating in the TV white space.

In November 2008, the U.S. Federal Communication Commission (FCC) issued a report and order providing the rules under which unlicensed wireless devices can operate in unused TV channels, referred to as “TV white space.” Regulators in other countries have also been con-

sidering TV white space regulations. These TV white space channels are those not utilized in a given geographic location for TV broadcasts, CATV headends, or other licensed devices (such as professional wireless microphones).

The IEEE 802.22 Working Group has been developing a standard for wireless regional area networks (WRANs) in the TV white space. And recently the IEEE 802.11 working group initiated a project to develop an amendment to the 802.11 wireless local area network (WLAN) standard for operation in the TV white space.

The regulations for operation in the TV white space do not restrict access to any particular type of wireless device. Since these wireless networks are unlicensed, they do not have exclusive access to the TV white space. In some locations there may be many TV white space channels while in other locations there may only be a few.

Standardized coexistence mechanisms between wireless networks operating in the unlicensed TV white space spectrum are critical to prevent interference between different wireless technologies. The P802.19.1 project provides an excellent consensus-driven forum open to all stakeholders. Information is available on the web site at <http://www.ieee802.org/19/>

FCC Adopts Order to Clear 700 MHz Frequencies

On January 15, 2010, the Federal Communications Commission adopted an Order and Further Notice of Proposed Rulemaking prohibiting the further distribution and sale of devices that operate in the 700 MHz frequency. This action helps complete an important component of the DTV Transition by clearing the 700 MHz band to enable the rollout of communications services for public safety and the deployment of next generation 4G wireless devices for consumers.

The order will primarily impact the use of wireless microphone systems that currently operate in the 700 MHz band. These unlicensed devices cannot continue to operate in this band because they may cause harmful interference to public safety entities and next generation consumer devices that will be utilizing the 700 MHz frequency. Thus, the Commission is making clear that no devices utilizing this frequency may be sold or distributed. In order to ensure that individuals and groups currently using unauthorized devices in this band have ample time to transition to appropriate frequencies, the FCC is providing a sunset period until June 12, 2010, one year from the DTV Transition.

The Commission is also unveiling an aggressive consumer outreach plan in order to assist consumers who have previously purchased wireless microphone systems

and other related devices that utilized the 700 MHz band. Through the Commission's website, www.fcc.gov/cgb/wirelessmicrophones, consumers can learn whether their wireless device is currently operating in the prohibited band and whether their devices may be retuned to operate on another band.

FCC Makes Declaratory Ruling on Wireless Towers

A November 2009 Declaratory Ruling by the FCC promotes the deployment of broadband and other wireless services by reducing delays in the construction and improvement of wireless networks. Wireless operators must generally obtain State and local zoning approvals before building wireless towers or attaching equipment to pre-existing structures. To encourage the expansion of wireless networks, Congress has required these entities to act "within a reasonable period of time" on such requests.

In many cases, delays in the zoning process have hindered the deployment of new wireless infrastructure. Accordingly, the FCC has defined timeframes for state and local action on wireless facilities siting requests, while also preserving the authority of states and localities to make the ultimate determination on local zoning and land use policies.

The first part of the Declaratory Ruling concludes that there should be a "reasonable time" beyond which inaction on a siting application constitutes a "failure to act." In the event a State or local government fails to act within the appropriate time period, the applicant is entitled to bring an action in court under Section 332(c)(7)(B)(v) of the Communications Act, and the court will determine whether the delay was in fact unreasonable under all the circumstances of the case. The Commission concluded that the record supports setting timeframes of 90 days for the review of collocation applications; and 150 days for the review of siting applications other than collocations. The ruling also declares that a state or local government cannot deny a wireless service facility siting application because service is available from another provider.

Multi-Gigabit Wireless Specification

Wireless Gigabit Alliance (WiGig, www.wireless-gigabitalliance.org), an organization founded in May 2009 to advance the adoption and widespread use of 60 GHz wireless technology worldwide, has announced the completion of its unified wireless specification. The WiGig specification enables high performance wireless display and audio and provides data transfer rates more than 10 times faster than today's wireless LANs, extending Wi-Fi technology while supporting backward compatibility with existing Wi-Fi devices. The WiGig version 1.0 specification includes the following key elements:

- Supports data transmission rates up to 7 Gbps – more than 10 times faster than the highest 802.11n rate
- Supplements and extends the 802.11 Medium Access Control (MAC) layer and is backward

- compatible with the IEEE 802.11 standard
- Physical layer enables both the low power and the high performance WiGig devices, guaranteeing interoperability and communication at gigabit rates
- Protocol adaptation layers are being developed to support specific system interfaces including data buses for PC peripherals and display interfaces for HDTVs, monitors and projectors
- Support for beamforming, enabling robust communication at distances beyond 10 meters
- Widely used advanced security and power management for WiGig devices

LXI Consortium Elects Board and Officers

The LXI Consortium recently held its annual elections for the Board of Directors, officers and committee chairs. Von Campbell of Agilent Technologies will continue to serve as the Consortium's president. He holds a bachelor's degree in electrical engineering from Purdue University and a master's in electrical engineering from Stanford University. Campbell oversees Agilent's involvement in multiple industry consortia.

The Board of Directors will consist of three appointed directors from the Strategic Members and two elected directors from the Participating Members:

- Von Campbell, Agilent Technologies
- Jochen Wolle, Rohde & Schwarz
- Bob Stasonis, Pickering Interfaces
- Rob Purser, The MathWorks
- David Ashley Poole, Aeroflex

Other officers elected by the Board include:

- Technical Committee Chair: David Owen, Pickering Interfaces
- Conformance Committee Chair: Jochen Wolle, Rohde & Schwarz
- Marketing Committee Co-Chairs: Elizabeth Persico, Agilent Technologies; and Bob Stasonis, Pickering Interfaces
- Executive Director: Bob Helsel, Bode Enterprises, LLC

Since the beginning of 2009, the LXI Consortium has grown steadily, both in terms of membership and in the number of compliant products available.

40 and 100 Gb/s Ethernet Protocols Drafted

Ethernet protocols with operating speeds of 40 Gb/s and 100 Gb/s are closer to reality. Project completion and final approval as a standard are expected in June 2010. The IEEE 802 Executive Committee approved forwarding the draft of the next higher speed Ethernet standard for the final of two stages of balloting. Once the ballot has been completed, the draft standard will be submitted for approval by the IEEE-SA Standards Board as an IEEE standard.

IEEE P802.3ba will be known by its full name of "IEEE

Standard for Information Technology— Telecommunications and Information Exchange Between Systems – Local and Metropolitan Area Networks – Specific Requirements Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications – Amendment: Media Access Control Parameters, Physical Layers and Management Parameters for 40 Gb/s and 100 Gb/s Operation.”

The project aims to extend the existing IEEE 802.3 Ethernet protocol to operating speeds of 40 Gb/s and 100 Gb/s in order to provide a significant increase in bandwidth while maintaining maximum compatibility with the installed base of IEEE 802.3 interfaces, previous investment in research and development, and principles of network operation and management.

In addition, a related standard, the International Telecommunication Union’s Telecommunication Standardization Sector (ITU-T) Recommendation G.709, “Interfaces for the optical transport network (OTN),” is being revised to support transport of 40 Gb/s and 100 Gb/s Ethernet over the OTN and is on track for approval.

For more information on the IEEE P802.3ba 40Gb/s and 100Gb/s Ethernet Task Force, visit <http://www.ieee802.org/3/ba/>

Major EMC Committees Join Forces

The aim of EMC (electromagnetic compatibility) is to ensure the reliability and safety of all types of systems wherever they are used and exposed to electromagnetic

environments. Both of the principal IEC TCs (Technical Committees) that deal with EMC – CISPR, the International Special Committee on Radio Interference, and TC 77: Electromagnetic compatibility – held joint meetings in late 2009.

CISPR deals with the protection of radio reception against the unwanted effects of interference caused or emitted by all types of electrical appliances. On one hand, it sets the limits of interference that enable different devices to function in the same electromagnetic environment. On the other, it deals with the instrumentation and the various methods used for measuring those emission levels.

TC 77 prepares International Standards and TRs (Technical Reports) that deal with the correct operation of devices or equipment subjected to electromagnetic disturbance, including network overloading. TC 77 has a horizontal function since it exists to serve the work of many other TCs.

Work in progress involving both CISPR and TC 77 includes the following:

- Several SCs (Subcommittees) in CISPR are currently working on introducing the new RMS-Average (root mean square) detector, which was developed to provide better protection for digital broadcast services.
- Work is continuing in CISPR/A to develop the use of FFT (fast Fourier transform) measurements. Potentially, this could dramatically reduce the test

time for emission measurements.

- CISPR/A is also working on reference site measurements and antenna calibration. Both are important reference documents for test equipment used in emission measurements.
- CISPR/B has set up two maintenance teams. One is studying the important area of micro-generation technologies, or Grid Connected Power Conditioners. The other is developing a new method of measuring emissions from microwave ovens based on Amplitude Probability Density.
- CISPR/D is working on developing suitable standards to cover new vehicular technologies such as hybrid and all-electric drive systems.
- CISPR/F has introduced radiated emissions testing for battery-driven products that previously might not have been the object of testing.
- CISPR/I is continuing with work on new International Standards for multimedia products.

On a general level all the CISPR SCs work together with IEC TCs and external organizations to develop standards that continue to provide adequate protection for all users of the radio spectrum, while at the same time make use of the latest measurement techniques and cover the ever-converging technologies seen in products in the marketplace.

The Member Bodies of CISPR are CIGRE (International Council on Large Electric Systems), EBU

(European Broadcasting Union), ETSI (European Telecommunications Standards Institute), IARU (International Amateur Radio Union), and ITU-R (International Telecommunications Union – Radio-communications Sector).

For more information, see the International Electrotechnical Commission (IEC) web site: www.iec.ch

Alliance Holds Organizational Meeting

The ProTECTS (Promotion of Two-Way Emergency Communication and Tracking Systems) Alliance held its first organizational meeting, in Phoenix, Ariz., immediately following the annual Iridium Communications Inc. Partners Conference in late January. The ProTECTS Alliance is intended to serve as a bridge connecting industry, government, the international search-and-rescue (SAR) community and end users.

Since its inception in late 2009, the ProTECTS Alliance has reached a membership level of 38 companies. Membership is open to mobile satellite companies, service providers, product developers, manufacturers, system integrators, network operators, resellers, distributors, retailers, users, consultants, SAR organizations, first responders, trade associations, regulatory bodies and non-governmental organizations (NGO).

Iridium will serve as a facilitator for the ProTECTS Alliance and will provide assistance in hosting meetings and distributing information through the Iridium Web site, www.iridium.com
