



IEEE DySPAN 2010 EXPLORES GLOBAL COMMERCIALIZATION & DYNAMIC EXPANSION OF RF SPECTRUM

Since its launch in 2005, the IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN) has greatly influenced the global commercialization and advancement of next generation smart radio and wireless system technologies throughout the United States, Europe and Asia.

Held in Singapore from April 6 – 10, IEEE DySPAN 2010 continued this lofty trend by attracting hundreds of leading scientists, industry professionals and government officials worldwide to more than 100 sessions, panels, keynotes, demonstrations and tutorials dedicated to the issues surrounding the effective use of the RF spectrum.

“With the ever growing popularity of wireless communications, the demand for radio spectrum is outstripping supply, making it a highly valued and scarce resource worldwide,” noted IEEE DySPAN co-chair Douglas C. Sicker, a senior advisor to the Federal Communications Commissions Broadband Plan and a professor at the University of Colorado in the United States. “As a result, IEEE DySPAN has become a preeminent international venue for optimizing wireless spectrum use and resolving dynamic access challenges.”

Throughout the event, industry experts representing the United States, China, New Zealand, Japan, Australia, Egypt, Thailand and the United Kingdom among other countries as well as Microsoft, Bell Laboratories, Sony Ericsson, Google and British Telecom discussed the “future of wireless devices and their ongoing ability to empower lives and enhance the human experience.” Included in these addresses were the presentations of industry leaders like Dan Reed, Corporate Vice President, Technology Policy and Strategy of Microsoft’s eXtreme Computing Group, who spoke about the

importance of “Digital Convergence and Flexible Communication.” International dignitaries such as Geok Leng Tan, the Chief Technology Officer and Senior Director of Technology & Planning at the Infocomm Development Authority (IDA) of Singapore and IEEE DySPAN 2010 general chair as well as Dr. Liu, Yan Director-General of the State Radio Monitoring Center (SRMC) of People's Republic of China also addressed attendees about the current status, strategic plans and visions for radio spectrum management in each of their countries.

In each case, conference speakers reiterated the importance of developing continued “infospheres” that create mobility, improve energy efficiencies and enable complex services that will increasingly add value to people’s lives. Other key points addressed the need to “overcome the conflicting laws of global communications agencies,” while “intersecting the expertise of non-traditional providers” to create dynamic, cognitive and invisible solutions for everyday users.

Further expanding on this theme was Mazar Nekkovee of British Telecom, who emphasized the importance of “rescuing telecom operators from the mobile broadband data crunch” and developing dynamic spectrum access techniques that include cognitive access to TV White Spaces. He further noted that “LTE and other 4G technologies offer some relief but alone will not be sufficient.”

During his keynote, Dr. Hideo Miyahara, president of NICT, also detailed NICT’s future vision for the New Generation Network (NWGN) concept based on the current development of ICT technologies. According to Dr. Miyahara, the latest research into dynamic spectrum access is key for developing the NWGN and furthering NICT’s leading role in the standardization of cognitive radio technologies.

Equally provocative were the event’s panel sessions, which provided international presenters with the forum for discussing the evolution of dynamic spectrum access initiatives and global cognitive radio regulations. “This year’s conference included a strong focus on the regulatory and policy aspects of Dynamic Spectrum Access (DSA),” added Dr. Sicker. “In addition to the paper policy sessions, DySPAN hosted a panel that considered the impact of the Federal Communications Commission’s recently released National Broadband Plan.

“This Plan includes a significant role for wireless systems as integral elements in the national broadband strategy and proposes several recommendations that consider the role of dynamic spectrum access. The panel was also afforded the opportunity to highlight the implications of this initiative from wireless, spectrum policy, and spectrum technology perspectives, while providing a unique venue for exploring complex DSA aspects and future spectrum needs.”

Held jointly with the session on the Broadband Task Force was also the high-level panel titled “DSA: An Incipient Revolution or A Technology Fad?” Organized by Prof. Heather Zheng of the University of California, Santa Barbara and Dr. Milind M. Buddhikot of Bell Labs, Alcatel-Lucent, this panel provided an international dais consisting of Dr. Victor Bahl (Microsoft Research), Dr. Petri Mähönen (RWTH, Aachen) and Dr. Maziar Nekovee (British Telecom Research) with the venue for advancing discussions on the practical and commercial deployment of DSA technologies.

Setting the stage for this session was panel chair Milind Buddhikot, who noted that the success or failure of DSA depends on several factors such as the implementation of viable service and business models, the perceived or real complexity of DSA technology and the political and cultural value of its resulting benefits. “The future is bright for DSA technologies as they represent the only cost-effective way for meeting the challenge of delivering ultra-broadband wireless to exponentially increasing device populations,” elaborated Buddhikot during the panel.

Further commenting on the ongoing evolution of DSA initiatives was Victor Bahl, who said “white space networking is the first main-stream manifestation of an opportunistic dynamic spectrum access network. It has captured the imagination of the world - let’s get it right!”

Continuing this path of discussion was the panel session titled, “Cognitive Radio: To Regulate or Not To Regulate?” Moderated by Geok Leng Tan of IDA in Singapore explored the focus of different communities for this “new promising technology.” Panelists including Liang Gu of Huawei Technologies in China, Hiroshi Harada of NICT of Japan, Chris Perera of the Radio Spectrum Policy & Planning, Ministry of Economic Development in New Zealand, Dan McCloskey of Google in the United States and Reza Karimi of OFCOM in the United Kingdom all emphasized the

need to create rich environments that minimize interference, include standardized specifications, do not restrain industry and foster the collaboration of global engineers, academics and regulators.

Other well-attended and prolific IEEE DySPAN 2010 events included the presentation of more than 20 technical and policy sessions ranging in topics from the “International Standardization of Cognitive Radio Systems” to “Potential Alliances for World-Wide Dynamic Spectrum Access,” as well as the ongoing demonstration of the latest research into technologies such as “TV White-Space Video Streaming,” “Cognitive Radio for Home Networking,” “Decomposable MAC Frameworks for Highly Flexible” and “Adaptable MAC Realizations.”

As for the future, conference organizers announced the schedule for upcoming IEEE DySPAN events, which will now be held annually rather than every 18 months given the worldwide importance placed on this conference and its global acceptance as a leading venue dedicated to the advance of dynamic spectrum access research and technologies. This includes holding the next IEEE DySPAN in April or May of 2011 in Aachen, Germany and IEEE DySPAN 2012 in Bellevue, Washington sometime in the spring.

For more information on either IEEE DySPAN 2011 or 2012 including registration and “call for paper” details please visit (www.ieee-dyspan.org) or contact Heather Ann Sweeney, IEEE Communications Society, 3 Park Avenue, New York, NY 10016. Phone: (212) 705-8938. E-mail: h.sweeney@comsoc.org.

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