IEEE WCNC 2009:
Explores newest advances in wireless communications and cooperative systems

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Nearly 600 industry professionals, academics and government officials joined the IEEE Wireless Communications & Networking Conference (WCNC) in April to explore the latest advancements in wireless cellular communications and cooperative systems. In all, more than 550 technical papers, sessions, panels and keynotes highlighted the future of wireless communications, systems and applications as well as the newest technologies, applications, market trends and business implications.

At the invitation of WCNC 2009 General Chair Lajos Hanzo of the University of Southampton, the four-day event held in Budapest, Hungary officially commenced with an opening salutation from IEEE President John Vig. Citing "the huge momentum in contributions," Vig thanked HTE and the society's worldwide fellowship of members, volunteers and strategic network of partners, including IEEE Press & Wiley publishers, for their ongoing support, which over the past 57 years helped to make IEEE ComSoc one of the world's foremost technical communications organizations. Dr Vig also participated in a meeting co-organized by a number of local IEEE Chapters.

An IEEE Life Fellow and an active IEEE participant for the past 30 years, Vig also attended the 'Green Radio' panel discussion later that evening, which was convened and moderated by Lajos Hanzo. The panel included distinguised British Professors Aghvami and McLaughlin as well as Dr Hoshyar, who collaborate under the recent 'Green Radio' initiative of the UK's Virtual Centre of Excellence known as VCE, also funded by the Engineering and Physical Sciences Research Council (EPSRC).

Andrea Goldsmith, Professor of Electrical Engineering at Stanford University, delivered one of the morning keynotes on "The Next Wave in Wireless Technology: Challenges and Solutions." During her address Prof. Goldsmith emphasized the "exponential worldwide growth enjoyed by the wireless communications industry" over the past few decades and "the role of next generation, high-performance wireless networks, which must be designed to support significant increases in data rates, coverage, spectral and energy efficiencies, reliability with the aid of new networking paradigms." According to her, "The next wave of wireless technology is upon us. Wireless communication systems are increasingly expected to deliver higher data-rates (Gbps) with low latency and reliable coverage in both indoor and outdoor environments, while supporting new services. "But, there are numerous challenges ranging from the size and cost of devices to the management of interferences at the system level. As a result, we must make more efficient use of the wireless spectrum and create an innovative vision, which treats interference as a friend that can be exploited through cooperation, cognition and cross-layer protocol designs, including sophisticated relay strategies."

Continuing the theme, Gerhard Fettweis, Vodafone Chair in TU Dresden, commented on the "Current Frontiers in Wireless Communications: Fast & Green & Dirty," while addressing the future's hottest research challenges. This includes "enabling high cellular data rates with increased spectral efficiency and fairness," "overcoming analog impairments with the aid of sophisticated RF design" and tackling "the challenges of designing 'green radio.'" "Yesterday, we believed the cellular phone would be the "black hole" of integration, encompassing all wireless standards, allowing communication over an increasing number of air interfaces," stated Fettweis. "Today we see that we were wrong: e.g. DVB-enabled phones have only a modest market share and UWB is currently out. A better insight into the factors deciding the success or failure of the diverse solutions is needed. The "wireless roadmap" of the past gives us researchers valuable input towards understanding what sort of solutions will be needed in the future as well as the challenges that will no doubt keep future generations of researchers busy."

For more information on next year's conference and paper submission guidelines, interested parties are urged to visit: *www.ieee-wcnc.org/wcnc*. The IEEE WCNC 2010 "Call for Papers" deadline is September 18, 2009.