

1. March 12 (Monday) 10:50am-12:15pm

Title: The future of cellular: what is "4G"?

Panel Organizer: Dr. Wenwu Zhu (Intel R&D China)

Panel Chair: Dr. Wenwu Zhu (Intel R&D China)

Panelists: Prof. Ke GONG (Tainjin Univ., China)

Dr. Reinaldo A Valenzuela (Lucent Bell-Labs)

Prof. Hamid Aghvami (King's College London)

Panel description:

What is 4G? Does the 3GPP's Long Term Evolution represent 4G? Or is it personal mobile broadband like Mobile WiMAX?

From industry to academia, people are defining and developing it. In this panel, we will present and discuss what is 4G from various perspectives -- from Mobile Broadband Evolution and cellular evolution, from technology and requirements, from geographic continents, from applications and services, etc.

2. March 12 (Monday) 15:55pm-17:25pm

Title: Mobile TV

Panel Organizer: Dr. Chih-Lin I, VP&GD, Communications Technologies, Hong Kong Applied Science and Technology Research Institute.

Panel Chair: Prof. Gong Ke, President Tianjin University, China

Panelists:

- Dr. Liang Wu, Executive Vice President, PCCW

- Dr. Fuyun Ling, Vice President of Technology, Qualcomm Inc.

- Mr. Evan Chan, Director of Cellular Market, Freescale Semiconductor Inc.

- Mr. Kim Kyung-Won, Director of Technology Strategy, TU Media Corp., Korea

- Prof. Jian Song, Director of Tsinghua University DTV Center, China

Panel description:

The whole world is ready for digital TV broadcasting, and anticipating the wide scale launch of Mobile TV. There are many exciting technology and standards developments, including DVB-H, T-DMB/S-DMB, MediaFLO, DMB-TH, and cellular streaming. How are they different? How to pick the right one for a particular region? What are the areas of further improvements or enhancement?

3. March 13 (Tuesday) 10:45am-12:30pm

Title: The future of Cooperative Communication

Panel Organizer: Aylin Yener, Penn State University, USA

Panel Chair: Aylin Yener, Penn State University, USA

Panelists:

David Gesbert, EUROCOM, France

Shaline Kishore, Lehigh University, USA

Dan Rubenstein, Columbia University, USA
Sennur Ulukus, University of Maryland, USA

Panel description:

The wireless network of the near-future is envisioned to be one that can provide high-rate, high-reliability connectivity between terminals without the need of a static and expensive infrastructure. With the promise of all wireless ad hoc networking for all, comes the idea of the terminals in the network to help each other on a variety of levels, most importantly in carrying information for each other in the inherently multi-hop network. *Cooperative communications* has recently become a key approach in realizing this idea. This panel, comprised of experts in a variety of aspects of cooperative communications, will discuss the recent developments as well as the many (practical) challenges in bringing true cooperation into the design of wireless networks, and look into the future of cooperative communications. The discussion will include theoretical performance gains expected of user cooperation, challenges of realizing these gains in a practical environment and associated design ideas.

4. March 13 (Tuesday) 14:00pm-15:25pm

Title: Boom Time for Wireless Data Services & Applications' Perspectives from Hong Kong

Panel Organizer: Ir. Jolly Wong

Panel Chair: Ir. Jolly Wong

Panel members: Alan Mok (SmarTone-Vodafone)

Mr. Mike Ropicky (Senior Director, Product, Marketing and Operations,
Network and Enterprise Asia Pacific)

Mr T Y Chan, (AD Regulatory, OFTA, HK)

Mr. Mike Ropicky (Senior Director (Product), Marketing and
Operations, Network and Enterprise, Motorola Asia Pacific)

Panel description:

It is evident that new broadband wireless technologies such as WiFi, UWB, WiMAX and 3/3.5/4G have evolved to provide some viable platforms for numerous data services and applications including:

Wireless video applications

Wireless telemedicine services

Wireless sensor systems

Wireless computing/messaging applications

Hong Kong has been among some of the world-wide pioneers in applying these data applications for daily uses. In this panel, we will invite panelists to talk about their experiences and their future visions of such applications.

5. March 13 (Tuesday) 15:55pm-17:25pm

Title: Road to 4G from Mobile WiMAX/WiBro

Panel Organizer: Byeong Gi Lee (Seoul National Univ), Joonho Park (Samsung Electronics)

Panel Chair: Byeong Gi Lee (Seoul National Univ), Joonho Park (Samsung Electronics)

Panelists:

Alvarion (Mo Shakouri Mohammad.Shakouri@alvarion.com)

Samsung (Joonho Park)
Intel (Rong Peng)
KT (Hyunpyo Kim)
Sprint (Dean Prochaska)

Panel description:

Key technologies that are deemed to make 4G mobile broadband services feasible are OFDM, fast handoff, simple network architecture and IP friendly application. Among the existing wireless systems, including WiFi, GSM, W-CDMA, CDMA 1x, 1xEV-DO, HSPA, there is no one that implements all those key technologies. The most prominent system at present and in the near future that can possibly support all those key technologies is Mobile WiMAX/WiBro.

Mobile WiMAX/WiBro is based in the IEEE 802.16e global standard for multi-vendor, open end-to-end technology, full optimized for IP-data services. It uses OFDMA technology and simple network architecture to dramatically increase the speed and bandwidth available to support mobile broadband connectivity. In the near future it will compete with 3G LTE and other 4G mobile technologies in the race to deliver wireless high speed broadband networks and services. The success of Mobile WiMAX/WiBro will be a touchstone for 4G technology and a cornerstone in the popular 4G mobile broadband service.

This panel session deals with the status and future trends of Mobile WiMAX -- the product roadmaps (e.g, chip, device, system, service), the evolution path to 4G, and other related materials. It will give the latest and the most comprehensive information of Mobile WiMAX/WiBro in the past, present, and the future.

6. March 14 (Wednesday) 8:30am-10:15am

Title: Practical MIMO

Panel Organizer: Dr. Chih-Lin I, VP&GD, Communications Technologies, Hong Kong Applied Science and Technology Research Institute.

Panel Chair: Dr. On Ching Yue, Science Advisor, Innovation and Technology Commission, HKSAR

Panelists:

- Prof. Lajos Hanzo, Chair of Telecommunications, University of Southampton
- Dr. Howard Huang, Distinguished MTS, Lucent Bell labs
- Prof. Roger Cheng, Hong Kong University of Science and Technology; also Acting R/D Director at ASTRI
- Prof. Geoffrey Li, Georgia Tech
- Prof. Li Pin, City University of Hong Kong

Panel description:

MIMO has promised tremendous opportunity since the ground breaking discovery of the "Generalized Shannon Capacity" in the early '90s. How will the promise be fulfilled in order to meet the ever increasing demands in wireless communications? How do we make the system practical in limited portable and handheld form factors?

7. March 14 (Wednesday) 10:45am-12:30pm

Title: Personal and Local Area Networks - towards Gbit/s

Panel Organizer: Dr. Jason Trachewsky, Broadcom

Panel Chair: Dr. Jason Trachewsky, Broadcom

Panelists:

Dr. Madhavan, Microsoft Research (tentative)

Prof. K-C Chen, National Taiwan University, Taiwan

Dr. Hiroyo Ogawa, New Generation Wireless Communications Research Center, National Institute of Information and Communications Technology, Japan T.B.D.
T.B.D.

Panel description:

Wireless personal and local area networking at rates greater than 1 Gbps presents a choice between using plentiful unlicensed millimeter-wave bandwidth or more constrained bandwidth at lower carrier frequencies. Systems using the millimeter-wave unlicensed bands avoid the need for high spectral efficiency, but they introduce new RF design challenges and suffer from high path loss. Of course, the short wavelength enables design of small antennas, and arrays of such antennas may be used to address range requirements.

Using lower frequencies is attractive from the perspective of path loss and RF impairments. However, lower-frequency systems offer another choice between operating on dedicated channels at high spectral efficiency or sharing bandwidth used by other RF devices. The first option has been selected by next-generation wireless LAN systems and imposes tight RF requirements and the need for advanced digital signal processing. Multiple antennas are again used, but to improve spectral efficiency. The second option has been chosen by UWB; a large bandwidth is shared with other systems at low transmit power spectral density.

While lower spectral efficiency reduces some of the RF design challenges, others appear. The media access control problem also becomes more challenging, and variations in regulatory requirements threaten worldwide deployment.

Finally, due to the increasing demand for bandwidth to provide Gbps local and personal area networks, co-channel interference will become a more severe problem, and regulatory authorities are starting to release new bands for use by unlicensed devices. These new bands will require cooperative usage and interference avoidance, and new techniques will need to be implemented to gain access to these bands.

8. March 14 (Wednesday) 14:00pm-15:25pm

Title: Broadband Wireless Multimedia (BWM) System in China

Panel Organizer: Dr. Chih-Lin I, VP&GD, Communications Technologies, Hong Kong Applied Science and Technology Research Institute.

Panel Chair: Dr. Zihua Guo, Director of Broadband Wireless Lab, Lenovo Corporate Research

Panelists:

- Dr. Dongya Wu, Director, China Electronics Standardization Institute, MII

- Prof. Zhigang Cao, Tsinghua University

- Prof. Jinglin Shi, Director of Next Generation Internet R&D Center, Institute of Computing Technology, Chinese Academy of Science

- Dr. Xiaodong Zhang, Shanghai Research Centre of Wireless Communications

- Prof. Xin Su, Tsinghua University

Panel description:

BWM is the first system in industry that integrates the broadcasting service and the broadband wireless access service in the radio access network, instead of in the service layer only. This converged network brings a lot of benefits compared with current separated systems. It targets for the next generation wireless network with both high system performance (as LTE) and novel usage scenarios. Several novel technologies are employed in the system to achieve the convergence in the radio layer, such as PHY, MAC and network architecture. What are the specific challenges and potential solutions?