

## Tutorial Proposal 6

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### Speaker's Biodata:

**Dr. Maode Ma** received his BE degree in automatic control from Tsinghua University in 1982, ME degree in computer engineering from Tianjin University in 1991 and Ph.D. degree in computer science from Hong Kong University of Science and Technology in 1999. He started his professional career as an engineer in computer industry in 1982. Starting from 1991, he was an assistant professor in the Department of Computer Engineering at Tianjin University. Since 2000, Dr. Ma has joined the School of Electrical and Electronic Engineering at Nanyang Technological University in Singapore as an assistant professor. At NUT, he is teaching a postgraduate course titled *Wireless Networking*. His current research interests are performance analysis of computer networks, optical networks, wireless networks, real-time systems and scheduling.

**Dr. Peter H. J. Chong** received the B.Eng. (with distinction) in electrical engineering from the Technical University of Nova Scotia, Halifax, NS, Canada, in 1993, and the M.A.Sc. and Ph.D. degrees in electrical engineering from the University of British Columbia, Vancouver, BC, Canada, in 1996 and 2000, respectively. Between July 2000 and January 2001, he worked in the Advanced Networks Division at Agilent Technologies Canada Inc., Vancouver, BC, Canada. From February 2001 to May 2002, he was with the Radio Communications Laboratory at Nokia Research Center, Helsinki, Finland, and was involved in research on WCDMA and standardization for HSDPA to be included in Rel 5. During his stay in Finland, he has taught part of a graduate course in WCDMA at the Helsinki University of Technology, Helsinki, Finland. Since May 2002, he has been with the School of Electrical and Electronic Engineering, Nanyang Technological University (NTU), Singapore, where he is an Assistant Professor. In NTU, he will be teaching a graduate course in cellular communication systems. His research interests are in the areas of mobile communications systems including interference effects in digital modulations, digital modulations over fading channels, channel assignment schemes, radio resource management and multiple access.

**Tutorial Title:** Wireless Networks: Today and the Future

**Subject Area:** Wireless Networking

**Duration :** Half Day

**Tutorial Abstract:**

The wireless LAN has become a popular solution as a wireless access network to the Internet in recent years. The first part of the tutorial will provide the primary knowledge of the wireless LAN including the physical layer, medium access control layer, and protocol stack of the wireless LAN. Furthermore, the integration of wireless LAN with 3G cellular networks will be discussed as the further development of the wireless LAN.

Currently, several 3G standards have been developed and their air interfaces are based on either CDMA or TDMA technology. CDMA technology is one of the most widely adopted 3G air interfaces. WCDMA is one of the 3G standards and is standardized within 3GPP. WCDMA has two modes, FDD and TDD. The WCDMA systems and products based on Rel'99 have just started to appear to the market. The most significant new technologies of WCDMA evolution to beyond 3G are in Rel 5 due on 03/2002. Rel 6 is under discussion and is expected to be ready by 06/2003.

**Potential audience:**

This tutorial is aimed at the researchers from academic and industries, practicing engineers, and technical managers who need to know both of the technical and practical aspects of Wireless LAN systems and their further development, 3G cellular networks with the most up-to-dated WCDMA technologies. This can help audience in research and development on WCDMA systems.

**Other Information:**

We have delivered one tutorial to the IEEE ICCS2004 in Singapore on Sept. 6, 2004.