

3GPP2 Air Interface Evolution

Speaker: Mr. Zhouyue Pi, Senior Staff Engineer

Date: Friday, Nov 10, 2006

Time: 10 am - 12 noon

Venue: WH 413 (CReWMan Lab)

Abstract:

This presentation provides an introduction to DO Rev. C, the ongoing air interface evolution standard in 3GPP2 that promises peak data rate of 260Mbps on the forward link, 70Mbps on the reverse link, and high overall spectral efficiency with a scalable bandwidth up to 20MHz. In this presentation, the basics of OFDMA and overview of DO Rev. C will be given. The advanced communication technologies such as sub-band scheduling and multiple-input-multiple-output (MIMO) technologies will be explained. The forward link and reverse link superframe structure of DO Rev. C will be introduced. We then review the design details of preamble, forward link channels, and reverse link channels, taking into consideration the design goals, constraints, and engineering tradeoffs. Some important system operations such as system acquisition, resource allocation, and reverse link power control will be explained. Finally, some exemplary system performance will be given.

Biography:

Zhouyue Pi received his M.S. in Electrical Engineering from Ohio State University, Columbus, OH in 2000 and B.E. in Automation from Tsinghua University, Beijing, China in 1998, respectively. He graduated with honor from Tsinghua University and was the recipient of the Ohio State University Fellowship. Since September 2000, he has been with Nokia Research Center, first in Dallas, and since August 2004, in San Diego, as a Research Engineer, Senior Research Engineer, and Principal Research Engineer. In April 2006, he joined Samsung Telecommunications America in Dallas as a Senior Staff

Engineer. His work is focused on wireless system research, radio access network design, and mobile station modem development. He is the main contributor to Nokia's standardization efforts in cdma2000 Rev. C and Rev. D and lead Samsung in 3GPP2 physical layer standardization. He published more than 10 journal and conference papers and has 15 U.S. and world patents granted or pending.