Posting Detail

Title : (Reminder) Distinguished Lecture on Very-high Throughput Wireless Local Area Networks by Dr Trevor S. Bird

Body :

Department of Electronic Engineering
&
State Key Laboratory of Millimeter Waves (Hong Kong)

IEEE AP/MTT HK Joint Chapter

Distinguished Lecture on

Very-high Throughput Wireless Local Area Networks

By

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Date *: 13 May 2011 (Friday)*
Time *: 05:00 p.m. – 06:00 p.m.*
Venue *: Room G 6302, 6/F, Green Zone, Academic Building, City University of Hong Kong*

Abstract
Wireless systems are now an integral part of almost all activities around the planet. Specific applications that are targeting short-range indoor wireless are high-definition multimedia interfaces, desk-top busses, rapid download of videos to iPods and on-chip connection. To be compatible with wired networks (eg. to minimise latency), future short-range wireless networks will need to offer data rates as high as 100 Gbps. Added to this, technology roadmaps indicate that since the 1900s the operating frequency of wireless systems has been increasing at a rate at about 10 times every 20 years. This means that by 2020 it is predicted that a single carrier may require operating frequencies of around 500 - 600 GHz (ie. 0.5 – 0.6 terahertz (THz)).

The use of terahertz frequencies as a means of achieving very high throughput communications is discussed. At the present time, THz electronic systems are at a very early stage of development and some components are non-existent and require further research.

A terahertz communication system is proposed for future indoor wireless local area networks (WLAN) with data rates up to 40 Gbps. Some of the technical challenges of producing such a system are discussed. Examples of components of future subsystems such as antennas and modulators will be described. One conclusion is that to implement THz networks, using components available in the foreseeable future, moderate-to-high gain multiple beam antennas will be required.

Biography
Trevor S. Bird received the B. App. Sc., M. App. Sc. and PhD degrees from the University of Melbourne. He is currently a CSIRO Fellow and Principal of Antengenuity, a specialist consulting firm, an Adjunct Professor at Macquarie University and a Guest Professor of Shanghai Jiao Tong University.

Dr Bird is a Fellow of four learned societies, including the Australian Academy of Technological and Engineering Sciences and IEEE. He has published widely in the areas of antennas especially for wireless and satellite communications while active in commercial exploitation of research (holds 13 patents). He has received 5 best paper awards including the 2001 H.A. Wheeler Applications Prize Paper Award of the IEEE Antennas & Propagation Society. Teams he has led have been recognised for excellence on three occasions including the Society of Satellite Professionals International (New York) in 2004. Dr Bird has been recipient of a CSIRO medal twice for research excellence. He received an Australian Centenary Medal in 2003 for service to Australian society in telecommunications and also that year was named Professional Engineer of the Year by the Sydney Division of Engineers, Australia.

He was a Distinguished Lecturer for the IEEE Antennas & Propagation Society from 1997 to 1999, Vice-chair and Chair of the NSW IEEE Section in 1999 to 2000 and 2001 to 2002 respectively, Associate Editor of the IEEE Transactions on Antennas & Propagation from 2001 to 2004, Editor-in-Chief of these Transactions from 2004 to 2010. Currently, he is member of the Editorial Boards of IEEE Transactions on Microwave Theory & Techniques, Journal of Infrared, Millimeter and Terahertz Waves and IET Microwaves, Antennas & Propagation as well as Chair of the IEEE Antennas & Propagation Society's Publication Committee. His biography has since 2006 been listed in Who's Who in Australia.

**** ALL ARE WELCOME ****

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Venue :	Not Applicable
Category :	Academic Seminar
Department/Office :	State Key Lab of Mm Waves (SKL)
Event Start Date :	2011-05-13
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Attachment :	

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