

The EXPO for Designers and Developers

IEEE COMMUNICATIONS 2nd ANNUAL EXPO

Where Design & Development Engineers and Senior Management go to learn the latest industry advancements.

EXPO PROGRAM INCLUDES:

- > ACCESS '07 EXECUTIVE
BUSINESS FORUM
(12 sessions & Executive Lunch Panel)
- > DESIGN & DEVELOPERS
FORUM
(12 sessions)
- > TUTORIALS & WORKSHOPS
(20 Tutorials & 9 Workshops)

Industry Exhibit Showcase

FOR PROSPECTIVE EXHIBITORS
see page 5



27 - 29 November 2007
Hilton Washington Hotel
Washington, DC

www.ieee-globecom.org/2007



The EXPO for Designers and Developers

IEEE COMMUNICATIONS

2nd ANNUAL EXPO

Network and Exchange Ideas with Industry Pioneers

TABLE OF CONTENTS

Welcome	3
Executive Committee	4
Program at a Glance	4
EXPO Exhibitors	5
Plenary and Keynote Speakers	6
ACCESS '07 Executive Business Forum	9
Design and Developers Forum	11
Tutorials	13
Workshops	16
Maniac Challenge, Gold Program, and EntNet ..	18
Social Events	18
Tours	19
Transportation	19
Hotel Information	19
Registration Form	20
Patrons and EXPO Exhibitors	23

**REGISTER BY 31 OCTOBER
AND SAVE!**

www.ieee-globecom.org/2007

SPOTLIGHT ON...

IEEE COMMUNICATIONS EXPO,

hosted by IEEE GLOBECOM, offers attendees multiple opportunities to meet and interact with their peers in a stimulating and thriving environment.

INDUSTRY LEADERS

Scott McGregor, CEO, Broadcom
Tuesday, 27 November 2007 • 8:00 am - 9:30 am

Mark A. Wegleitner, Senior Vice President, Technology
& CTO, Verizon Communications
Tuesday, 27 November 2007 • 8:00 am - 9:30 am

Dr. Jeong Kim, President, Bell Labs at Alcatel-Lucent
Tuesday, 27 November 2007 • 6:15 pm - 7:15 pm

Matt Bross, CTO, BT Group
Wednesday, 28 November 2007 • 8:00 am - 9:30 am

Ernie J. Carey, Senior Vice President at Network Services, AT&T
Southwest, AT&T Operations, Inc.
Wednesday, 28 November 2007 • 8:00 am - 9:30 am

Representative Cliff Stearns, Florida's Sixth District
Wednesday, 28 November 2007 • 2:00 pm - 3:45 pm

Prof. Wu Hequan, Vice President, Chinese Academy of Engineering
Thursday, 29 November 2007 • 8:00 am - 9:30 am

NETWORKING OPPORTUNITIES

Awards Luncheon
Tuesday, 27 November 2007 • 12:15 pm - 1:45 pm

50th Anniversary Celebration
Hosted by Dr. Irwin Jacobs (Co-Founder and Chairman, QUALCOMM, Inc.)
featuring Keynote Dr. Jeong Kim (President, Bell Labs at Alcatel-Lucent);
IEEE GLOBECOM Panel Session with Roberto de Marca (PUC-Rio);
Ann Miller (University of Missouri, Rolla) and Tom Rowbotham (Vesbridge
Partners); and more.
Tuesday, 27 November 2007 • 6:15 pm - 7:15 pm

Welcome Reception
Tuesday, 27 November 2007 • 7:30 pm - 10:00 pm

Conference Banquet
Wednesday, 28 November 2007 • 7:00 pm - 10:00 pm

50th Anniversary Commemorative Lecture
by Prof. Leonard Kleinrock, UCLA
Thursday, 29 November 2007 • 12:00 pm - 1:45 pm

GREETINGS FROM THE IEEE COMMUNICATIONS EXPO CHAIRS



Jorome (Jerry) Gibbon
J & BG Consultants, LLP
IEEE GLOBECOM 2007/EXPO
General Chairman



Adam Drobot
Telcordia Technologies
IEEE Communications EXPO
Chair

On behalf of the Executive Committee, we are pleased to invite you to the 2nd Annual IEEE Communications EXPO to be held 27 – 29 November 2007 in Washington, DC in conjunction with the 50th Annual IEEE GLOBECOM. The IEEE Communications EXPO is geared for “designers and developers” and will feature exhibits and a comprehensive technical program focused on education and information for industry engineers and their management. The EXPO technical program includes the Design & Developer Forum with 9 seminars, the ACCESS’07 Executive Business Forum with 12 sessions, 20 tutorials, and 9 workshops.

The ACCESS’07 Executive Business Forum is a multi-disciplinary executive forum focused on the “Last Mile” access technologies. The forum covers broadband and wireless access technologies currently pursued by service providers, municipalities, and other user communities. Topics include technology and business issues surrounding the introduction of FTTH, xDSL, cable, WiFi, WiMAX, 3G and 4G broadband access networks.

Highlights of the program include keynote addresses by senior government and industry executives, executive panels, and business sessions covering the technology, architecture, economics, management, and applications aspects of broadband access networks. The concentration of policy makers and business leaders in the vicinity makes Washington, DC the perfect location for this forum.

We have invited 20,000 communications designers and developers looking to meet manufacturers and suppliers of products and services related to components, subsystems, and systems including hardware, middleware, and software.

To review the complete program of the IEEE Communications EXPO and IEEE GLOBECOM 2007 international conference, visit www.ieee-globecom.org/2007. If you are interested in exhibiting, please contact Connie Shaw, Exhibit Sales Account Manager, at 703- 631-6200 or Toll Free 800-564-4220.

We look forward to a great 50th anniversary conference and to your participation.



Dave Waring
Telcordia Technologies
ACCESS’07 Chair



Dilip Krishnaswamy
QUALCOMM, Inc.
ACCESS’07 Chair



Jeff Friedhoffer
Lincoln Laboratory
D&D Forum Chair

EXECUTIVE COMMITTEE • PROGRAM AT A GLANCE

GENERAL CHAIR:

Jorome (Jerry) Gibbon, J&BG Consultants

GENERAL VICE CHAIR:

Karl Rauscher, Bell Labs, Alcatel-Lucent

TECHNICAL PROGRAM CHAIR:

Xuemin (Sherman) Shen, University of Waterloo

EXPO CHAIR:

Adam Drobot, Telcordia Technologies

DESIGN & DEVELOPERS FORUM CHAIR:

Jeff Friedhoffer, Lincoln Lab

ACCESS '07 BUSINESS EXECUTIVE FORUM CO-CHAIRS:

David Waring, Telcordia Technologies

Dilip Krishnaswamy, QUALCOMM, Inc.

TUTORIAL CO-CHAIRS:

Thomas Hou, Virginia Tech

Qiang Zhang, Hong Kong University of Science and Technology

WORKSHOP CO-CHAIRS:

Ness B. Shroff, Purdue University

Xiaojun Lin, Purdue University

LOCAL ARRANGEMENTS CHAIR:

Donald Rickerson, Personal Satellite Network, Inc.

PATRONAGE CHAIR:

Tim Weil, Booz Allen Hamilton

EXPOSITION OPERATIONS MANAGER:

Judy Spargo, J. Spargo & Associates

EXHIBITS SALES REPRESENTATIVE:

Connie Shaw, J. Spargo & Associates

MARKETING CHAIR:

Denny Moen

FINANCE CHAIR:

Douglas H. Holly, JDSU

TREASURER:

Bruce Worthman, CAE, IEEE Communications Society

CONFERENCE SECRETARY & LOCAL

ADMINISTRATIVE SUPPORT:

Debra Meale, IEEE National Capital Area

GMIC ADVISOR:

Paul Hartmann, RFSAW

IEEE COMMUNICATIONS SOCIETY

Nim Cheung, President, 2006-07

Doug Zuckerman, President Elect

John M. Howell, Executive Director

Sergio Benedetto, VP, Technical Activities, 2006-07

Harvey Freeman, VP, Membership Services, 2006-07

Fred Bauer, Director, Meetings & Conferences, 2006-07

Bruce Worthman, Manager, Conferences, Finance & Administration

June Leach-Barnaby, Senior Manager, Meetings & Conference

Gayle Weisman, Manager, Meetings & Conferences, CMP

John Pape, Marketing Manager

Heather Ann Sweeney, Associate Marketing Manager

Kerianne Sullivan, Desktop Production Specialist

David Alvarez, Information Systems & Networking Manager

PROGRAM AT A GLANCE

Monday, 26 November 2007

8:00am - 6:00pm	MANIAC Challenge
9:00am - 12:00pm	Tutorials & Workshops
9:00am - 5:00pm	Full Day Workshops
12:30pm - 2:00pm	LUNCH BREAK (on your own)
2:00pm - 5:00pm	Tutorials & Workshops

Wednesday, 28 November 2007

8:00am - 9:30am	Plenary Session
9:00am - 4:30pm	Communications EXPO - OPEN
9:30am - 10:00am	COFFEE BREAK in the Expo Hall*
10:00am - 11:45am	ACCESS Sessions, D&D Sessions, Symposia Technical Sessions & Poster Session
12:15pm - 1:45pm	ACCESS Executive Lunch Panel
12:15pm - 2:00pm	LUNCH BREAK (on your own)
2:00pm - 3:45pm	ACCESS Sessions, D&D Sessions, Symposia Technical Sessions & Poster Session
3:45pm - 4:15pm	COFFEE BREAK in the Expo Hall*
4:15pm - 6:00pm	ACCESS Sessions, D&D Sessions, Symposia Technical Sessions & Poster Session
4:15pm - 6:45pm	GOLD Program
7:00pm - 10:00pm	Conference Banquet

Tuesday, 27 November 2007

8:00am - 9:30am	Plenary Session
9:30am - 10:00am	COFFEE BREAK
10:00am - 11:45am	ACCESS Sessions, D&D Sessions & Symposia Technical Sessions
12:15pm - 1:45pm	Awards Luncheon
2:00pm - 3:45pm	ACCESS Sessions, D&D Sessions & Symposia Technical Sessions
3:45pm - 4:15pm	COFFEE BREAK
4:15pm - 6:00pm	ACCESS Sessions, D&D Sessions & Symposia Technical Sessions
6:15pm - 7:15pm	Keynote & 50th Anniversary Celebration
7:30pm - 10:00pm	Exhibit Opening & Welcome Reception

Thursday, 29 November 2007

8:00am - 9:30am	Plenary Session
9:00am - 4:30pm	Communications EXPO - OPEN
9:30am - 10:00am	COFFEE BREAK in the Expo Hall*
10:00am - 11:45am	ACCESS Sessions, D&D Sessions, EntNet Opening Session, Symposia Technical Sessions & Poster Session
12:00pm - 1:45pm	50th Anniversary Commemorative Lecture
12:15pm - 2:00pm	LUNCH BREAK (on your own)
2:00pm - 3:45pm	D&D Sessions & EntNet Panels
3:45pm - 4:15pm	COFFEE BREAK in the EXPO Hall*
4:15pm - 6:00pm	D&D Sessions & EntNet Panels

Friday, 30 November 2007

8:00am - 11:45am	EntNet Panels
8:30am - 5:00pm	Technical Sessions
9:00am - 12:00pm	Tutorials & Workshops
9:00am - 5:00pm	Full Day Workshops
12:30pm - 2:00pm	LUNCH BREAK (on your own)
2:00pm - 5:00pm	Tutorials & Workshops

Visit the Exhibit Hall

Concourse Level / Hilton Washington Hotel

Don't miss your opportunity
to visit with Exhibitors & Network
Win prizes during the coffee break!

Auerbach Publications - Taylor & Francis Group, LLC**Booth: 315**www.taylorandfrancis.com

CRC Press, the leading publisher of telecommunications books, journals, and online products, has scores of new books on Ad Hoc and Sensor Networking, IP, Multimedia Communications, Software and Services; Optical Networks and Systems; Performance Modeling, QoS, and Reliability; Wireless Communications and Networking. Take advantage of our 15%-25% conference discount. www.crcpress.com

Cambridge University Press**Booth: 310**www.cambridge.org/us

Visit our booth for a 20% discount on all titles. New books include Space-Time Wireless Systems, edited by H. Bölcskei, D. Gesbert, C. B. Papadias, and A.-J. van der Veen; Coexistence in Wireless Networks, by Nada Golmie; and MIMO Wireless Communications, edited by Ezio Biglieri, Robert Calderbank, Anthony Constantinides, Andrea Goldsmith, Arogyaswami Paulraj, and H. V. Poor.

CANTO**Booth: 304**www.canto.org**Elsevier, Inc.****Booth: 200**www.wbsaunders.com

Get 20% off all our publications at our booth #200 Our classics include: Computer Networks: A Systems Approach, Third Edition by Larry L. Peterson and Bruce S. Davie, Introduction to Data Compression, Third Edition by Khalid Sayood, and Bulletproof Wireless Security by Praphul Chandra.

Institute for Information Industry, Taiwan**Booth: 305**www.iii.org.tw

Network and Multimedia Institute, Institute for Information Industry (NMI/III), Taiwan is dedicated to the research of advanced and key ICT technology. Based on embedded system, network communication, and mobile multimedia technologies, NMI/III is trying to provide technology services and solutions to device manufacturers, chip-set vendors, and system integrators.

Institution of Engineering and Technology, The**Booth: 319**www.theiet.org

The Institution of Engineering and Technology is one of the world's leading professional societies for the engineering and technology community. The Institution provides a global knowledge network to facilitate the exchange of knowledge and ideas and promotes the positive role of Science, Engineering and Technology in the world.

NIKSUN**Booth: 222**www.niksun.com

NIKSUN developed its core technology, with scalable and integrated architecture, in anticipation of the Internet's impact on businesses and governments and their dependence on this new media to conduct business. NIKSUN has become the worldwide leader, providing a complete range of solutions for network security, forensics, compliance, and network performance.

Now Publishers, Inc.**Booth: 318**www.nowpublishers.com

NOW Publishers introduces Foundations and Trends®, publishing high-quality survey and tutorial articles using modern techniques to enable instant linking to the primary research and real-time updating by authors. Each Foundations and Trends® covers a major branch of a scientific discipline and offers current, state-of-the-art review articles by research leaders in their field.

OPNET Technologies**Booth: 204**www.opnet.com

OPNET Technologies, Inc. (NASDAQ: OPNT) is a leading provider of scalable, high-fidelity network simulation software. OPNET's R&D solutions are leveraged by thousands of professionals from defense organizations, network equipment manufacturers, and universities. OPNET products support hundreds of networking technologies, including MANET, WiMAX, UMTS, WiFi, IPv6, MPLS, and more.

Springer**Booth: 314**www.springer.com**Telcordia****Booth: 214**www.telcordia.com

Telcordia Technologies, Inc. is a leading global provider of telecommunications network software and services for IP, wireline, wireless, and cable. As the industry continuously evolves, Telcordia has the experience and reach to deliver the critical elements of success to help communication providers worldwide deploy innovative and profitable new services via any network or device while helping carriers aggressively reduce costs and grow revenues.

University of Maryland - Engineering**Booth: 423**www.oaee.umd.edu**Wiley Blackwell****Booth: 218**www.wiley.com

Founded in 1807, John Wiley & Sons, Inc. is an independent, global publisher of print and electronic products. Wiley specializes in scientific and technical books, journals, textbooks and education materials for colleges and universities, and professional and consumer books and subscription services.

For further details on how to Exhibit at the IEEE Communications Expo, please contact Connie Shaw at J. Spargo & Associates at 703-631-6200 ext. 3905.



PLENARY & KEYNOTE SPEAKERS

Tuesday, 27 November 2007 • 8:00 am - 9:30 am

SCOTT MCGREGOR

CEO
Broadcom



Scott McGregor is the President and Chief Executive Officer of Broadcom. In this role, he is responsible for guiding the strategic direction of the company, business development, and day-to-day operations.

Mr. McGregor, who is also a member of the Board of Directors, joined Broadcom in January 2005 after serving since September 2001 as President and CEO of the Philips Semiconductors division of the Netherlands-based Royal Philips Electronics. At Philips, Mr. McGregor oversaw one of the world's largest semiconductor suppliers, with 34,000 employees in over 50 countries and nearly US\$6 billion in sales in 2004. In addition to his CEO role, he was also a member of the Group Management Committee of Royal Philips Electronics. He joined Philips Semiconductors in February 1998 as head of its Emerging Business unit, focusing on fast growing markets for smart cards, RFID, networking, digital media processing and computing, and leading the group to profitability and nearly US\$1 billion in sales.

Before joining Philips, from 1990 to 1998 Mr. McGregor served in various senior management positions, most recently as Senior Vice President and General Manager at Santa Cruz Operation Inc. (SCO), a provider of network computing solutions. From 1985 to 1990, he served in senior positions at Digital Equipment Corporation (now part of HP) where he led the UNIX workstation software group and was one of the architects of the X Window System. Prior to joining Digital Equipment Corporation, he worked at Microsoft, where he was Director of the Interactive Systems Group and the architect and development team leader of the original version of Microsoft® Windows®. Prior to Microsoft, Mr. McGregor spent over six years in various positions at the Xerox Corporation's Palo Alto Research Center (PARC), where he was involved in designing software for the first personal computers employing graphical user interfaces. Mr. McGregor received a B.A. in Psychology and a M.S. in computer science and computer engineering from Stanford University.

Tuesday, 27 November 2007 • 8:00 am - 9:30 am

MARK A. WEGLEITNER

Senior Vice President, Technology
& Chief Technology Officer
Verizon Communications



Mark Wegleitner is Senior Vice President – Technology and Network Planning, and Chief Technology Officer (CTO) for Verizon Communications. His responsibilities include technology assessment, network architecture, platform development and laboratory testing for the local and long distance wireline communications businesses, as well as network planning for local wireline communications. In his current role, he and his organization support all wireline business units in the management of technology and network matters.

Prior to his current assignment, Mr. Wegleitner served as Vice President, Technology and Engineering at Bell Atlantic Network Services, where he was responsible for all technology and engineering functions. Before that, he was CTO at Bell Atlantic Network Services. Since joining Bell Atlantic, he has also held a variety of other management positions in strategic planning, network architecture, technology development, information systems, research and development, broadband implementation, and new services technology.

Mr. Wegleitner began his career with Bell Telephone Laboratories in local switching systems development. He later joined the exchange switching systems design organization at AT&T General Departments, where he had responsibility for the introduction of new features and services on local switching systems. He held another brief assignment with Bell Laboratories in local switching systems engineering before transferring to Bell Atlantic. Mr. Wegleitner received a B.A. in mathematics from St. John's University, and a M.S. in electrical engineering and computer science from the University of California at Berkeley.

Tuesday, 27 November 2007 • 6:15 pm – 7:15 pm

Dr. IRWIN JACOBS

Co-Founder & Chairman
QUALCOMM, Inc.

JACOBS



Dr. Irwin Mark Jacobs co-founded QUALCOMM Incorporated, pioneer and world leader of Code Division Multiple Access (CDMA) digital wireless technology, in July of 1985 and currently serves as the Company's chairman. Dr. Jacobs previously served as co-founder, president, chairman and CEO of LINKABIT® Corporation. He guided the growth of LINKABIT from a few part-time employees in 1969, to over 1,400 employees in 1985, with offices in San Diego, Boston, and Washington, DC. In August 1980, LINKABIT merged with M/A-COM, Incorporated and in February 1981, Dr. Jacobs became a member of M/A-COM's board of directors. In February 1983, he became executive vice president of M/A-COM and subsequently a member of the office of the president. While at LINKABIT and M/A-COM, Dr. Jacobs led the development of the Air Force Dual Modem, the first commercial VSAT, VideoCipher® and the first commercial TDMA digital wireless handset, among other products. From 1959 to 1966, Dr. Jacobs was an assistant/associate professor of electrical engineering at Massachusetts Institute of Technology (MIT) and a staff member of the Research Laboratory of Electronics. During the 1964-1965 academic year, he was a NASA Resident Research Fellow at the Jet Propulsion Laboratory. In 1966, he joined the newly formed Department of Applied Electrophysics (now Electrical and Computer Engineering) at the University of California, San Diego (UCSD).

While at MIT, Dr. Jacobs co-authored a basic textbook on digital communications entitled, Principles of Communication Engineering. First published in 1965, the book is still in use today. Dr. Jacobs received a bachelor's degree in electrical engineering in 1956 from Cornell University and master of science and doctorate of science degrees in electrical engineering from MIT in 1957 and 1959, respectively.

Tuesday, 27 November 2007 • 6:15 pm – 7:15 pm

DR. JEONG KIM

President
Bell Labs at Alcatel-Lucent

KIM



Dr. Jeong H. Kim's career is a unique synthesis of academic distinction and technical, entrepreneurial, and organizational leadership. Businessman and teacher, philanthropist and former nuclear submarine officer, Dr. Kim is currently President of Bell Labs, the communication industry's most heralded research organization. Dr. Kim's executive mission is to infuse Bell Labs' research and development with an entrepreneurial spirit that generates revolutionary technologies and dramatic impact in the marketplace.

Jeong Kim won a place at Johns Hopkins University, where in three years he completed degrees in electrical engineering and computer science while working for Digitus, a technology start-up in which he became a partner.

After a seven-year stint in the U.S. Navy — a period in which he earned a master's degree in technical management from Hopkins — Dr. Kim joined AlliedSignal to work at the Naval Research Laboratory, simultaneously earning a PhD in reliability engineering from the University of Maryland.

In 1992, Dr. Kim launched Yurie Systems, the enterprise that would define him as one of the nation's most successful high-tech entrepreneurs. Yurie was built around an enormously flexible and robust asynchronous transfer mode technology that streamlined data communications between different systems. So successful was Yurie's switch that, in February 1997, Dr. Kim took the firm public; in May, Business Week ranked Yurie the #1 Hot Growth Company among all public companies in the United States. In 1998, Lucent Technologies acquired Yurie for \$1.1 billion in cash.

Wednesday, 28 November 2007 • 8:00 am - 9:30 am

MATT BROSS

Chief Technology Officer
BT Group

BROSS



Matt Bross, BT Group CTO, is responsible for setting the BT Group technology strategy and the vision and direction of innovation across BT. In his role at BT, Matt is responsible for BT's Research and Venturing efforts globally. Matt is the leading force behind BT's multi-billion pound, 21st Century Network transformation, and is leading innovation for BT. He has served on the boards of many companies providing strategic technology and business leadership. He is a commissioner of the Global Information Infrastructure Commission (GIIC) since December 2005, as Regional Director for Europe. GIIC is a confederation of CxO level executives engaged in the development, deployment, operation, financing, and use of ICT services and products.

Matt is also a board member of the Alliance for Telecommunications Industry Solutions (ATIS), a United States based body focusing on the development and promotion of technical and operations standards for the communications and related information technology industry globally. ATIS is accredited by the American National Standards Institute (ANSI). Matt is the Chairman on the Board of Advisors for the Global Innovation Research Centre (GIRC), the organization that works to foster innovation in Malaysian Government, industry and education sectors.

PLENARY & KEYNOTE SPEAKERS

Wednesday, 28 November 2007 • 8:00 am - 9:30 am

ERNIE J. CAREY

Senior Vice President at Network Services, AT&T Southwest
AT&T Operations, Inc.



Ernie J. Carey, Senior Vice President-Network Services for AT&T Southwest, is responsible for various network and operation functions across AT&T. In Texas, Oklahoma, Missouri, Kansas, and Arkansas, his area of responsibility includes all installation, repair, construction, engineering and surveillance functions. Mr. Carey's Mass Market Customer Care organization provides service delivery and assurance for broadband as well as service assurance for narrowband products across the AT&T 22-state footprint. He was appointed to his current position in July 2007.

Prior to his current position, Mr. Carey was Vice President, Advanced Network Technologies, responsible for the network planning and engineering for AT&T's premier video offering, AT&T U-verseSM TV. Mr. Carey was responsible for expanding AT&T's fiber-optics network deeper into neighborhoods to deliver AT&T U-verse TV, voice and high speed Internet access services.

Mr. Carey began his career with Southwestern Bell in 1975 in Houston, Texas, after graduating from college and holds both BBA and MBA degrees. Mr. Carey progressed through a series of operations, engineering, and marketing jobs in Southwestern Bell/SBC.

Mr. Carey was appointed by then Governor Bush as a member of the Commission on State Emergency Communications and also served for eight years on the Board of Directors of the Greater Harris County E911 District. In addition, he is a board member of the Houston Technology Advisory Board as well as the Technology Opportunity Institute. Finally, Mr. Carey is a member of the Engineering Advisory Board, College of Engineering, The University of Houston.

Thursday, 29 November 2007 • 8:00 am - 9:30 am

PROF. WU HEQUAN

Vice President
Chinese Academy of Engineering



Wu Hequan graduated from Wuhan Post and Telecommunications Institute in 1964. He has worked for the China Academy of Post and Telecommunications (CAPT) of MPT since 1964. He was Vice President and Chief Engineer of the China Academy of Telecommunications Technology (CATT) from 1997 to 2003. He has studied optical fiber transmission system and broadband network and managed R&D projects. In recent years, he has focused on the development strategy of NGN and NGI as well as 3G. He was elected Academician of the Chinese Academy of Engineering (CAE) in 1999 and Vice President of CAE since June 2002. He is currently serving as Vice Director of the Advisory Committee for the State Informatization of China as well as Vice Director of the Executive Council of the China Institute of Communications (CIC) and the Chinese Institute of Electronics (CIE), respectively. He is an advisor to the Communication S&T Committee of MII and a member of the Advisory Committee of the National Basic Research Program of China (973 Plan). He serves as Director of the Experts Committee of China's Next Generation Internet (CNGI) project. He is a senior member of IEEE.

Thursday, 29 November 2007 • 12:00 pm - 1:45 pm

PROF. LEONARD KLEINROCK

UCLA



Dr. Leonard Kleinrock created the basic principles of packet switching, the technology underpinning the Internet, while a graduate student at MIT. In this effort, he developed the mathematical theory of data networks. This was a decade before the birth of the Internet which occurred when his host computer at UCLA became the first node of the Internet in September 1969. He wrote the first paper and published the first book on the subject; he also directed the transmission of the first message to pass over the Internet. He was also responsible for setting up and running the Internet measurement facility that stressed the early Internet to establish its performance limits and to evaluate its performance and behavior. In these efforts, he laid the groundwork and established the discipline by which future generations of engineers would seek to model, measure and evaluate the computer and communication systems they were building. He was listed by the Los Angeles Times in 1999 as among the "50 People Who Most Influenced Business This Century".

Dr. Kleinrock received his Ph.D. from MIT in 1963 and has served as a professor of computer science at the University of California, Los Angeles since then, serving as chairman of the department from 1991-1995. He received his BEE degree from CCNY in 1957. He has also received honorary degrees from CCNY (1997), the University of Massachusetts, Amherst (2000), the University of Bologna (2005), and Politecnico di Torino (2005). He has published more than 240 papers and authored six books on a wide array of subjects including queueing theory, packet switching networks, packet radio networks, local area networks, broadband networks, gigabit networks and nomadic computing.

Tuesday, 27 November 2007 • 10:00 am - 11:45 am
Regulatory Policies Driving Fiber Access
 Chair: **Dr. Niel Ransom**, Board of Directors of AMCC, ECI, Telecom, Ellacoya Networks, Overture Networks and Teknovus

Unlike ADSL that has been deployed over an existing copper infrastructure, fiber access networks require significant investment in new loop facilities that must be justified in an era of strong open competition. Governments around the world struggle with crafting policies that at the same time encourage investment in fiber infrastructure (viewed as an important national goal) while also fostering telecommunications competition. Panel members will discuss the differing regulatory policies being applied in various world regions and their consequent impact on the deployment of fiber access networks.

Invited Speakers:
David Young, Verizon Communications
Marcus Weinkopf, Deutsche Telekom
Dorothy Attwood, AT&T
TBD, NTT

Tuesday, 27 November 2007 • 10:00 am - 11:45 am
Operator Perspectives on Next Generation Mobile Networks
 Session Chair: **Dr. Mallik Tatipamula**, Juniper Networks

Mobile services have been evolving rapidly towards broadband and multimedia based on emerging 3G/4G technologies. Successful delivery of these emerging mobile services requires that mobile operators consider designing and deploying efficient and optimized next generation mobile networks to address various challenges. In this session, experts from 5 top mobile operators share their perspectives on:

- Mobile services evolution
- Key challenges and potential solutions to provide mobility of IP services
- The need for smarter solutions to deliver the impressive performance of future radio networks in a real environment
- Implementation of 3G/LTE
- Need for coherent organization within a carrier to develop internal ecosystems

Invited Speakers:
Dr. Kazuo Imai-san, NTT DoCoMo
Dr. Kalyani Bogineni, Verizon Wireless
Dr. Klaus-Juergen Krath, T-Mobile International
Remi Thomas, Orange/France Telecom
Bob Pippert, Sprint-Nextel

Tuesday, 27 November 2007 • 2:00 pm - 3:45 pm
IPTV Network Requirements and Interoperability
 Session Chair: **Dan O'Callaghan**, Verizon Communications, ATIS IIF Chair

This session will explore the architecture, DRM, and Quality of Service requirements for IPTV, as well as considerations for IMS applications among other areas, as defined by the ATIS IIF. Attendees will gain from this session a thorough understanding of the technology and network planning direction for IPTV services. Areas of focus in this session include the technical and network considerations for IPTV services and deployment as they pertain to:

- Consumer Domain – the place where IPTV services will be consumed
- Network Provider Domain – the domain connecting customer and service providers
- Service Provider Domain – the domain providing service to a subscriber
- Content Provider Domain – the domain that owns or is licensed to sell content

Invited Speakers:
Randy Sharpe, Bell Labs, Alcatel-Lucent
Kinney Bacon, Scientific Atlanta
Jeff Carr, Sony Electronics
Kenneth Toney, Tektronix

Tuesday, 27 November 2007 • 2:00 pm - 3:45 pm
Moving Spectrum Management Forward: Technical and Regulatory Challenges
 Session Chair: **Fred Matos**, National Telecommunications and Information Administration (NTIA)

This session will highlight major spectrum management issues today and those expected in the near future. New spectrum management concepts will be described, and how they will improve access to the spectrum.

Tuesday, 27 November 2007 • 4:15 pm - 6:00 pm
Next Generation Home Network and Home Gateway
 Session Chair: **Dr. Tetsuya Yokotani**, Mitsubishi Electric Corp.

In this session, experts discuss the next generation home network from several points of view, such as requirements, functions, and implementation. Evolution of the NGN and its impact on the home network is discussed, including the impacts of multi-grade QoS and highly secure services on the home network and home gateway.

Invited Speakers:
Ryutaro Kawamura, NTT Cyber Solution Laboratory
Tetsuya Yokotani, Mitsubishi Electric
Lawrence Chee, PMC-Sierra
Nikolay Guenov, Freescale Semiconductor
Stanley Moyer, OSGI
Paulo Pastorino, HGI

Tuesday, 27 November 2007 • 4:15 pm - 6:00 pm
The Road to 4G: Obstacles and Challenges
 Session Chair: **Angeliki Alexiou**, Alcatel-Lucent

The objective of this session is to discuss and debate on what the most critical challenges are and how they should be addressed.

Invited Speakers:
Farooq Khan, Samsung
Richard Dean, QUALCOMM, Inc.
Angeliki Alexiou, Bell Labs, Alcatel-Lucent

Wednesday, 28 November 2007 • 10:00 am - 11:45 am
Broadband Deployments
 Session Chair: **Bruno Orth**, Deutsche Telekom

Operators around the world are making significant investments in new access network systems. Broadband is a critical component of the network evolution and this investment could determine the future of the wireline and mobile business. This session will provide an industry snapshot of broadband deployments worldwide.

Invited Speakers:
Dr. Shigeyuki Akiba, KDDI R&D Labs Inc.
Brian Whittton, Verizon Communications
Dan Parsons, BroadLight Inc.
Bruno Orth, Deutsche Telekom

Wednesday, 28 November 2007 • 10:00 am - 11:45 am
Wireless Technologies / Platforms / Services for Mobile Entertainment
 Session Co-Chairs: **Dilip Krishnaswamy**, QUALCOMM, Inc.
Bob Laribeau, TelecomView

This session will address wireless protocols and technologies, services, network architectures, and platforms for mobile television and for mobile entertainment in general. The panel members will present the strategies that service providers are adopting as they move from a limited market entry phase to a fully developed mass market phase. Trade-offs between personalization of the service vis-à-vis the cost and efficiency of delivering the service are considered. Wireless platform architecture requirements to provide support for such services are also considered. The session will discuss both the business and technical ramifications of these available choices.

Invited Speakers:
Mark Gannon, Motorola Labs
Alan Crouch, Intel Corp.
Dr. Phillip Alvelda, MobiTV, Inc.
Shaker Viswanathan, QUALCOMM MediaFLO Technologies
Regis Paquette, Alcatel-Lucent
Scott Poretsky, Reef Point Systems

ACCESS '07 EXECUTIVE BUSINESS FORUM

Wednesday, 28 November 2007 • 12:00 pm - 1:45 pm

Executive Lunch Panel

Chair and Panelists: **TBD**

Wednesday, 28 November 2007 • 2:00 pm - 3:45 pm

Community / Municipal / Regional Networks

Session Chair: **Dr. Richard Wolff**, Montana State University

The past few years have seen remarkable growth in the deployment of local and regional networks designed to provide broadband Internet access, support public safety and other applications. As network technology options mature, it becomes increasingly realistic for organizations and coalitions to consider building their own infrastructures. Often this approach can meet the needs of constituencies that might not otherwise be served. This session will discuss some of the latest trends and examples, including

- Should a municipality be a service provider?
- What are the incentives for a franchise holder?
- What is the business model?
- Will unlicensed spectrum really work (interference issues)?
- Will these networks provide adequate capacity and scalability?
- How does fiber fit in?
- What can we expect in future technologies (WiMAX replaces WiFi, for example)?

Invited Speakers:

Representative Cliff Stearns, Florida's Sixth District

Dr. Prathima Agrawal, Wireless Engineering Research and Education Center

Dr. John Waclawsky, Motorola

Dr. Jon Peha, Center for Wireless & Broadband Networking & Carnegie Mellon University

Wednesday, 28 November 2007 • 2:00 pm - 3:45 pm

Operational Aspects of Fiber Access Systems

Session Chair: **Dr. Thomas Pfeiffer**, Alcatel-Lucent Germany

Besides the high cost for fiber deployment, operators are concerned as well with the cost of the network over its lifetime. These operational costs may change the overall picture significantly and have a substantial impact on the operators' decision to deploy fiber access networks. On the one hand, low loss fiber installations allow for networks with low electrical power consumption while bridging long distances with high split factors and no intermediate regeneration. On the other hand, maintenance and trouble shooting of the highly sensitive optical network infrastructure puts a new burden onto the operators' business model. Finally, the high initial costs for fiber infrastructure deployment forces operators to take development of future system technologies into account and to keep the network open for migration from one to the next generation system. The speakers of this session will provide insights into operational aspects of optical access networks, from the perspectives of operators as well as system and test equipment vendors.

Invited Speakers:

David Meis, Corning

Malcolm Campbell, British Telecom

Yves T'Joens, Alcatel-Lucent

Thursday, 29 November 2007 • 10:00 am - 11:45 am

DSL Access and Gains from DSM

Session Co-Chairs: **Dr. John Cioffi**, Stanford University & ASSIA

Dr. George Ginis, ASSIA

The session will focus on recent improvements for DSL monitoring, maintenance and operations arising from Dynamic Spectrum Management (DSM). Speakers will include representatives from DSL service providers and companies implementing DSL management systems. The presentations will include information on the value to DSL operations offered by DSM techniques, experiences from DSM trials / deployments and views on the next steps for DSM.

Invited Speakers:

Dr. Ken Kerpez, Telcordia Technologies

Tom Starr, AT&T

Kevin Foster, BT Design

Jérôme Le Masson, France Telecom R&D

Dr. George Ginis, ASSIA

Thursday, 29 November 2007 • 10:00 am - 11:45 am

Advanced Telecom and Computing Operations Support

Session Chair: **Dr. Joe Bester**, The Aerospace Corp.

Customer demand for a diverse range of broadband services is on an aggressive rise, with expectations to provide transparent access to grid computing services in the future. Existing operations infrastructures were designed mainly for services tightly coupled to specific network technology. The real challenge comes from IP – and the decoupling of services from the underlying network it enables. Until recently, Network Management and Service Management were largely indistinguishable. Today, they are becoming quite separate disciplines, presenting a stress on older systems, and a challenge for the designers of new systems and operations architectures. The existing OSS environment has been hard pressed to economically provision, maintain and even bill the new services. This panel will provide carrier and vendor views on the main issues – and potential solutions – for successful operations of broadband networks and services.

Invited Speakers:

Joe Bester, The Aerospace Corp.

Roberto Sracco, Telecom Italia

Daniel Martin, IBM

Dr. Hideo Kuwahara, Fujitsu Laboratories

For complete session descriptions, visit <http://www.ieee-globecom.org/2007/access.html>

Tuesday, 27 November 2007 • 10:00 am - 11:45 am

High Reliability/Availability in Telecommunication Systems

Session Co-Chairs: **Xin Meng**, Motorola

Yan Liu, Motorola

Presentations:

- 1) Title: **Using Software Failure Data for Availability Evaluation**
Presenter: **Dr. Veena B. Mendiratta**, Bell Labs, Alcatel-Lucent
- 2) Title: **Modeling SIP Application Server Reliability**
Presenter: **Prof. Kishor Trivedi**, ECE Department, Duke University
- 3) Title: **Realizing Software Quality Benefits of Model-Driven Software Development**
Presenter: **Dr. Yuchen Zhang**, Motorola
- 4) Title: **Secured Mobile IPv6 Home Agent Reliability**
Presenter: **Hui Deng**, China Mobile
- 5) Title: **Balancing Time and Cost in Measuring Performance in a Multi-Service Network**
Presenter: **Todd Sankey**, Dyaptive Systems Inc.

Tuesday, 27 November 2007 • 10:00 am - 11:45 am

Dynamic Data Driven Applications Systems - New Drivers for Networking and Communications

Session Chair: **Dr. Frederica Darema**

Tuesday, 27 November 2007 • 10:00 am - 11:45 am, 2:00 pm - 3:45 pm & 4:15 pm - 6:00 pm

Modeling and Simulation Tools for Network Designers and Developers

Session Co-Chairs: **Jack L. Burbank**, (JHU/APL)

William T. Kasch, (JHU/APL)

Jon R. Ward, (JHU/APL)

Presentations:

- 1) Title: **Modeling and Simulation of Waveforms Introduction**
Presenter: **Jon Ward** (JHU/APL)
- 2) Title: **Implementing Modern Digital Communications Standards in LabVIEW FPGA**
Presenter: National Instruments
- 3) Title: **Waveform Creation Demonstration**
Presenter: Agilent Technologies
- 4) Title: **Modeling and Simulation of Waveforms**
Presenter: Mathworks
- 5) Title: **Network Simulation Introduction**
Presenter: **Jack Burbank** (JHU/APL)
- 6) Title: **Network Simulation**
Presenter: OpNet and Scalable Systems Representatives
- 7) Title: **A High-Fidelity and Time-Driven Simulator for Large Wireless Mesh Networks**
Presenter: **Don Cox**, **Vahideh Manshadi**, and **Hyunok Lee**, Stanford University
- 8) Title: **Distributed Systems**
Presenter: **Bill Kasch** (JHU/APL)

Tuesday, 27 November 2007 • 2:00 pm - 3:45 pm

Grids and Service-Oriented Networks

Session Chair: **Craig Lee**, The Aerospace Corp.

Tuesday, 27 November 2007 • 2:00 pm - 3:45 pm & 4:15 pm - 6:00 pm

Next Generation Mobile Wireless Broadband Technologies

Session Co-Chairs: **Andres Kwasinski**, Texas Instruments

Rana Sircar, Wipro

Tom Tofigh, AT&T

Presentations:

- 1) Title: **Challenges and Best Practices towards 4G**
Presenter: **Tom Tofigh**, WiMAX Forum AATG Chair
- 2) Title: **Designing and Implementing the Baseband Radio Modules in OFDM-based 4G Systems**
Presenter: **Andres Kwasinski**, Texas Instruments
- 3) Title: **Introduction to Mobile WiMAX Networks and QoS Requirements in WiMAX**
Presenter: **Rana Sircar**, Wipro Technologies
- 4) Title: **WiMAX NS-2 Simulator Design: Challenges in PHY/MAC Modeling to Support Scalable System Simulation**
Presenter: TBD
- 5) Title: **Long-Term Evolution of the 3G Wireless Standard: Key Technologies and System Performance**
Presenter: **Tarik Muharemovic**, Texas Instruments
- 6) Title: **The Business Case for Advanced WiMAX Receivers: From Initial Deployment to Mature Wireless Systems**
Presenter: **Mark Reed**

Tuesday, 27 November 2007 • 4:15pm - 6:00pm

Grids, Networks and Virtualization

Session Chair: **Craig Lee**, The Aerospace Corp.

Wednesday, 28 November 2007 • 10:00 am - 11:45 am

Next Generation Networks: A New Breed of Network and IT Service Infrastructure called "Service Oriented Networks" or "Web 21C"

Session Chair: **John Wittgreffe**, BT (British Telecom)

Presentations:

- 1) Title: **An brief overview of "Service Oriented Networks"**
- 2) Title: **Research Example: Use in orchestrating network and IT resources to deliver application level Quality (including demonstration)**
- 3) Title: **A view of an example service bus- the orchestration tools at the centre of an SON**
- 4) Title: **Research Example: Use in enabling new applications-virtual call centre demonstration**
- 5) Title: **Real Example - Live design and build of a new mobile telco application using web exposed capabilities with technical presentations/demonstrations**
Presenters: **John Wittgreffe**, BT
Kashaf Khan, Telco
Paul Deans, Telco
Hub Vandervoort, Progress

For complete session descriptions, visit http://www.ieee-globecom.org/2007/dd_forum.html

DESIGN AND DEVELOPERS FORUM

Wednesday, 28 November 2007 • 10:00 am - 11:45 am

Mobility Management in Wireless Networks

Session Co-Chairs: **Vivek Gupta**, Intel

Rana Sircar, WiPro

Presentations:

1) **Title: Seamless Mobility Requirements in IMT Advanced / 4G Networks and the Associated Challenges**

Presenter: **Vivek Gupta**, Intel

2) **Title: Advances in IETF and I3 Mobility Management**

Presenter: TBD

3) **Title: Cross-layer Mobility Management to achieve Handovers**

Presenter: **Nada Golmie**, NIST

4) **Title : Network & Device Management for Seamless Mobility**

Presenter: **Rana Pratap Sircar**, Wipro Technologies

Wednesday, 28 November 2007 • 2:00 pm - 3:45 pm & 4:15 pm - 6:00 pm

Current and Future Trends in Software Designed Radio/Cognitive Radio (SDR/CR) Design & Development

Session Co-Chairs: **Mark Buckner**, Oak Ridge National Laboratory

Paul Ewing, Oak Ridge National Laboratory

Presenter: **Eric A. Blossom**, Blossom Research, LLC

Presenter: **Dr. Joseph R. Cavallaro**, Rice University

Presenter: **Matt Ettus**, Ettus Research, LLC

Presenter: **Dr. Bruce Fette**, General Dynamics C4 Systems

Presenter: **Dr. Gary J. Minden**, University of Kansas

Presenter: **Dr. Borivoje Nikolic**, University of California at Berkeley

Presenter: **Dr. Barry S. Perlman**, U.S. Army Communications-Electronics R&D Center (CERDEC)

Presenter: **Dr. Michael B. Pursley**, Clemson University

Presenter: **Dr. Jeffrey H. Reed**, Virginia Polytechnic Institute and State University

Wednesday, 28 November 2007 • 2:00 pm - 3:45 pm & 4:15 pm - 6:00 pm

IMS (IP Multimedia Subsystem)

Session Co-Chairs: **Mike Loushine**, Telcordia Technologies

Vijay Varma, Telcordia Technologies

Melbourne Barton, Telcordia Technologies

Thursday, 29 November 2007 • 2:00 pm - 3:45 pm & 4:15 pm - 6:00 pm

Wireless Access for Vehicular Environments

Session Co-Chairs: **Tim Weil**, Booz Allen Hamilton

Jim Marousek, Booz Allen Hamilton

Dr. Tao Zhang, Applied Research of Telcordia Technologies

Presentations:

1) **Title: VII Enterprise Architecture - The Department of Transportation Vehicular Infrastructure Integration (DOT VII) program**

2) **Title: Technical Overview - The Wireless Access for Vehicular Environment (IEEE 1609) Protocol Stack**

3) **Title: Security and Privacy Within VII Privacy Preserving Vehicular Communications**

4) **Title: Identity and Access Management using the WAVE 1609.2 Protocol**

5) **Title: Building Services for the VII Environment - Use of the WAVE Networking Standard for In-Vehicle Communication**

Thursday, 29 November 2007 • 2:00 pm - 3:45 pm & 4:15 pm - 6:00 pm

Quantum Key Distribution Systems, Networks, and Applications

Session Chair: **Robert J. Runser**,

Laboratory for Telecommunications Sciences

Presentations:

1) **Title: Twenty-two Years of Quantum Key Distribution**

Presenter: **Richard Hughes**, Los Alamos National Laboratory

2) **Title: The SECOQC Quantum Key Distribution Network Prototype: Principles, Design and Implementation**

Presenter: **Momtchil Peev**, Smart Systems Division, Austrian Research Centers

Authors: **M. Peev**, **R. Alléaume**, **T. Länger**, **N. Lütkenhaus**, **O. Maurhart**, **L. Salvail**

3) **Title: Networking Considerations for Entanglement-based Quantum Key Distribution**

Presenter: **Nicholas A. Peters**, Telcordia Technologies, Inc.

Authors: **Nicholas A. Peters**, **Thomas E. Chapuran**, **Paul Toliver**, **Robert J. Runser**, **Matthew S. Goodman**

4) **Title: MagiQ's QPN Technology in Existing Network Infrastructure**

Presenter: **Mike LaGasse**, Magiq Technologies Inc.

Author: **Mike LaGasse**

5) **Title: Integrated Devices for Practical Fiber QKD Systems and their applications**

Presenter: **Yoshihiro Nambu**, NEC, Inc.

Authors: **Yoshihiro Nambu**, **Ken'ichiro Yoshino**, and **Akihisa Tomita**

6) **Title: Physical-Layer Encryption Aided by Optical Noise**

Presenter: **Gregory S. Kanter**, NuCrypt, LLC

For complete session descriptions, visit http://www.ieee-globecom.org/2007/dd_forum.html

Monday, 26 November 2007 • 9:00 am – 12:00 pm

T1: Spectrum Policy and the Wireless Engineer: Navigating the Regulatory Maze to Get New Technology from Laboratory to Market

Instructors: **Michael J. Marcus**, Marcus Spectrum Solutions
Anne Linton, Washington Federal Strategies, LLC

Wireless technology is subject to significant government regulation all over the world. This tutorial is an overview for wireless engineers of the regulatory issues you may encounter in moving a new technology from the lab to the marketplace and how to plan for them. These issues deal with frequency allocation, experimental licensing, licensing, unlicensed systems, and equipment authorization. Knowing what the issues are enables the developer to make realistic plans in parallel to R&D efforts.

Monday, 26 November 2007 • 9:00 am – 12:00 pm

T2: Code Designs for Multi-Terminal Communication Networks

Instructor: **Dr. Zixiang Xiong**, Texas A&M University

Recent works on limit-approaching practical designs for distributed source coding and dirty-paper coding have set the stage for applications of network information theory to multi-terminal communication networks (e.g., distributed sensor networks and wireless cooperative networks). This tutorial will provide a comprehensive coverage of the theory, practical designs and applications of distributed source coding, dirty-paper coding, and cooperative diversity.

Monday, 26 November 2007 • 9:00 am – 12:00 pm

T3: A Crash Course in Wireless Meshes

Instructor: **Dr. Victor Bahl**, Networking Research Group

This is a fast paced tutorial on the development of practical, deployable, and low-cost wireless mesh networks. The tutorial is designed to lay down the technological challenges for mesh networking and describe how the research community is addressing them. Issues associated with each layer of the protocol stack will be explored as well as various cross-layer approaches. There will be an emphasis on discussing the experiences and lessons learned from various experimental testbeds. This tutorial is ideal for engineers, graduate students, executives and practitioners in the field of wide-area wireless (3G) and 802.11 LAN technologies.

Monday, 26 November 2007 • 9:00 am – 12:00 pm

T4: Fundamentals of UWB Systems

Instructor: **Prof. Win Moe**, Massachusetts Institute of Technology (MIT)

This tutorial provides a basic understanding and a technical overview that encompass the fundamentals of UWB system design and analysis. It will cover relevant topics including Transmitted-Reference Systems, Rake Reception, Effect of Narrowband Interference, Distribution-Invariant Monotonicity Theorems, Fundamental Limits on Wide Bandwidth Signal Acquisition, and Ranging and Localization.

Monday, 26 November 2007 • 9:00 am – 12:00 pm

T5: Adaptive Processing and Cross-Layer Design in Wireless Communications

Instructor: **Prof. Mohamed Ibnkahla**, Queen's University

This tutorial covers adaptive techniques as well as cross-layer approaches and their impact on current and future wireless communications. The tutorial will be supported, in particular, with illustrations and demonstrations of adaptation in MIMO and OFDM systems, sensor and ad hoc networks, as well as heterogeneous networks.

Monday, 26 November 2007 • 2:00 pm – 5:00 pm

T6: Key Topics in Cognitive Radio Networks: Challenges, Tasks, Algorithms, and Testbed

Instructors: **Prof. Ekram Hossain**, University of Manitoba
Prof. Weidong Xiang, University of Michigan-Dearborn

This tutorial intends to provide the audience with an in-depth introduction to the fundamental concepts, essential principles, and advanced algorithms for CR systems with a broad coverage spanning from theoretical analysis to experimental testbed results. The main contents of this tutorial include: principles of CR, key physical layer technologies for CR, dynamic spectrum management/sharing models, and results from a CR testbed. At first, the tutorial will give an overview of CR systems including the basics of CR systems and the different spectrum sharing models. Next, a spectrum estimate and prediction model, a flexible spectrum allocation scheme, and system capacity analysis under a given interference temperature will be discussed in detail. After that, with a friendly introduction to the basic game theory concepts, several game theoretic dynamic spectrum management/sharing models for cognitive radio will be introduced. Applications of these models for spectrum sharing and pricing in WiFi and WiMAX-based cognitive radio networks will be also discussed. Finally, results from a CR testbed, which integrates a fast two-stage spectrum sensing algorithm, an efficient channel allocation scheme, and a Markov channel prediction model, will be presented. In this way, an exciting multidisciplinary area of "wireless" research will be exposed to the attendees.

Monday, 26 November 2007 • 2:00 pm – 5:00 pm

T7: The Next Generation CDMA Technologies

Instructor: **Prof. Hsiao-Hwa Chen**, National Sun Yat-Sen University

This tutorial covers various important issues about the next generation CDMA technologies as a major air-link technology for beyond 3G wireless applications. It includes the topics from next generation CDMA system modeling to analytical methodology, starting with the basics and progressing to advanced subjects. Innovative CDMA technologies will be introduced in a step-by-step approach, such as DS/CC-CDMA, OS/CC-CDMA, space-time complementary coding CDMA, M-ary CDMA, etc. As an all-in-one tutorial on next generation CDMA technologies, it is a must for telecommunications engineers, advanced R&D personnel, undergraduate and postgraduate students.

Monday, 26 November 2007 • 2:00 pm – 5:00 pm

T8: Standardization of MIMO-OFDM Technology

Instructors: **Dr. Syed Aon Mujtaba**, LSI Corporation
Dr. Jack Winters, AT&T Labs-Research

This tutorial will identify the various flavors of MIMO-OFDM that are being standardized in 802.11n, 802.16e, and LTE, and describe in detail the similarities and differences of these systems. The topics covered in this tutorial include spatial multiplexing, transmit diversity, and transmit beamforming techniques.

For complete tutorial descriptions,
 visit <http://www.ieee-globecom.org/2007/tuts.html>

Monday, 26 November 2007 • 2:00 pm – 5:00 pm

T9: IP Multimedia Subsystem (IMS): A Platform for Convergence and Next Generation Services

Instructor: **Vijay K. Varna**, Telcordia Technologies

This tutorial will start with a brief introduction to IMS vision and its evolution from GSM/UMTS. It will then discuss IMS concepts, architectures, procedures, protocols and services. As communications networks are evolving towards packet-based infrastructures with IMS control, consistent provision of services from different access networks becomes a major challenge, particularly during the transition period from circuit-switched networks. The tutorial will discuss how the 3GPP is addressing this challenge with its on-going and emerging work on IMS centralized services (ICS), Combined Circuit-Switched and IMS (CSI), Service Level Interworking of Messaging Services, and Multimedia Session Continuity. The tutorial will also cover fixed-mobile convergence, migration scenarios, interworking with existing networks, and a survey of field trials and early deployments of IMS networks.

Monday, 26 November 2007 • 2:00 pm – 5:00 pm

T10: Security Issues in Sensor Networks

Instructor: **Prof. Yang Xiao**, University of Alabama

This tutorial will provide an overview of the security issues and solutions of sensor networks including attacks, encryption, authentication, key managements, secure routing, secure aggregation, secure location, intrusion detection, privacy issues, security services, RFID security, Zigbee Security, lightweight ciphers, security in sensor and actuator networks, security in underwater sensor networks, etc.

Friday, 30 November 2007 • 9:00 am – 12:00 pm

T11: Cognitive Radio Networks for License-Exempt Use of TV Spectrum: FCC Regulation, Technical Challenges, and Emerging Standards

Instructors: **Dr. Jianfeng Wang**, Philips Research North America
Dr. Kiran Challapali, Philips Research North America

The aim of this tutorial is to bring together, and put in context, all the recent progress in addressing the various aspects of cognitive radio networks for license-exempt use of TV bands. This tutorial will cover recent relevant FCC regulation, technical challenges pertaining to communications, networking protocols and implementation, and summarize the emerging standard(s) for Cognitive Radios in TV bands.

Friday, 30 November 2007 • 9:00 am – 12:00 pm

T12: Next Generation Wireless Technologies: High Throughput WiFi, WiMAX, and UWB

Instructor: **Prof. Raj Jain**, Washington University in St. Louis

This tutorial on the latest advances in wireless data networking is designed for engineers and managers involved in design and deployments of wireless equipment. In addition to providing an overview of technology, issues, and standards, it also covers the technical details. The tutorial will focus on technological developments that enable high-speed wireless networks such as IEEE 802.11n LANs, WiMax, and Ultra wideband and how these technologies achieve the features and what products are available.

Friday, 30 November 2007 • 9:00 am – 12:00 pm

T13: Multiuser MIMO Techniques for Wireless Systems

Instructor: **Howard Huang**, Bell Labs at Alcatel-Lucent

This tutorial will present the theoretical capacity-achieving techniques in MU MIMO networks for the multiple access (uplink) and broadcast (downlink) channels. Because of the complexity of these capacity-achieving techniques, we describe suboptimum downlink techniques including sectorization and recent beamforming techniques using limited feedback. On the uplink, we make similar comparisons considering suboptimum resource allocation and multiuser detection techniques. In the context of cellular networks, the MU MIMO performance is limited by interference from adjacent cells. We describe a class of techniques known as network MIMO for mitigating the effects of intercell interference in which spatially distributed base stations transmit and receive signals in a coordinated manner. Finally, we propose a series of guidelines for applying MIMO techniques in practical wireless systems. Given the large number of multiuser MIMO techniques, these insights in performance and complexity tradeoffs can be used by system engineers to choose the right MIMO technology for next-generation wireless systems operating in various environments.

Friday, 30 November 2007 • 9:00 am – 12:00 pm

T14: Automotive Networking and Telematics Applications

Instructors: **Prof. Wanjiun Liao**, National Taiwan University
Prof. Phone Lin, National Taiwan University
Dr. T. Russell Hsing, Telcordia Technologies

This tutorial course is designed to address important research challenges undertaken for automotive networking and telematics applications. The focus is on network protocols, emerging communications standards, performance modeling for active safety, telematics, and infotainment applications enabled by a vehicular-to-infrastructure and vehicle-to-vehicle wireless communications technology.

Friday, 30 November 2007 • 9:00 am – 12:00 pm

T15: Web Security

Instructor: **Tom Chen**, Southern Methodist University

This tutorial aims to raise awareness of the many security risks related to the Web. The first part gives an overview of Web protocols and technologies, including DNS, HTTP, SHTTP, SSL, Java, Javascript, ActiveX, and AJAX. The second part of the tutorial focuses on the security of Web servers. We give an overview of possible attacks on Web servers and current practices to strengthen servers against attacks. The third part of the tutorial addresses attacks on the Web client (browser). Many attacks on the user attempt social engineering, malicious downloads, data theft, or exploits of software vulnerabilities. For social engineering, we describe defenses against phishing attacks. For malicious software, we describe the limitations deliberately placed on Java, Javascript, and ActiveX for security. Additional defenses include antivirus, firewalls, and intrusion detection systems. The last part of the tutorial describes current trends and open issues in Web security that merit attention from researchers and system administrators.

For complete tutorial descriptions,
visit <http://www.ieee-globecom.org/2007/tuts.html>

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

T16: MIMO Detection: Theory and Practice

Instructor: **Prof. John R. Barry**, Georgia Tech

This tutorial will present the basic principles of MIMO detection. We describe the fundamental problem, and present an overview of MIMO techniques that are used in practice. Our coverage ranges from simple linear detectors based on the zero-forcing and minimum-MSE criteria to the optimal maximum-likelihood tree-based sphere detector. In between, we will describe successive-cancellation or decision-feedback detectors, multistage detectors, and suboptimal tree-based detectors like the MMSE sphere detector, the Fano algorithm, the M-algorithm, and the K-best algorithm. The impact of both lattice-based preprocessing and ordering on performance and complexity will be described. This tutorial will benefit practicing engineers and researchers who are interested in understanding and doing research in MIMO and related topics, particularly those who are engaged in the design of high-speed wireless data systems.

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

T17: WiMAX: An Advanced Broadband Wireless System

Instructor: **Dr. Doru Calin**, Bell Labs at Alcatel-Lucent

The tutorial is primarily addressing the emerging broadband wireless solutions as specified by the IEEE 802.16 standards, often referred to as WiMAX (Worldwide Interoperability for Microwave Access) technology. WiMAX is an Orthogonal Frequency Division Multiplexing (OFDM) based system which offers promising high spectral efficiency, scalable carrier bandwidth options (e.g. from 1.25MHz to 20MHz), flexible spectrum options (e.g. 2-6 GHz), multiple duplexing options (Time Division Duplexing & Frequency Division Duplexing), various subchannelization options and users mobility thanks to its 802.16e variant, and more recently 802.16m. Technologies such as Hybrid Automatic Repeat Request (H-ARQ), Space Time Coding (STC), Advanced Antenna Systems (AAS), Multiple Input Multiple Output (MIMO) and Space Division Multiple Access (SDMA) have been enhanced to support mobile environments and to improve the broadband access speed. WiMAX supports a rich set of applications via a connection oriented service flow mechanism in both uplink and downlink directions, where service flow parameters can be dynamically managed through Medium Access Control (MAC) messages in order to meet the Quality of Service (QoS) requirements of various service classes. Examples of supported services are Unsolicited Grant Service (UGS), Real-Time Polling Service (rtPS), and Extended Real Time Polling Service (ErtPS) – particularly suitable for real time applications like speech with activity detection (VoIP). While the 802.16 standards provide a rich set of design options and a great deal of flexibility in defining the WiMAX related products, a significant challenge is often encountered in the selection of the most appropriate set of features and parameters and in finding the desirable deployment scenarios.

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

T18: Next Generation Cellular Networks: Features and Algorithms

Instructor: **Dr. Harish Viswanathan**, Bell Labs at Alcatel-Lucent

This tutorial will start with a brief introduction on the evolution of cellular networks and then describe the novel aspects of the next generation systems. There will be an emphasis on the fundamental concepts and design tradeoffs involved and discuss relevant algorithms for maximizing the performance using the various features in the standards. In particular, some novel algorithms for achieving efficient fractional frequency reuse patterns automatically will be presented. The tutorial will end with a brief description of the evolution of the radio access network architecture.

For complete tutorial descriptions,
visit <http://www.ieee-globecom.org/2007/tuts.html>

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

T19: Generalized MultiProtocol Label Switched (GMPLS) Networks

Instructor: **Prof. Malathi Veeraraghavan**, University of Virginia

This tutorial combines a top-down approach, starting with applications for circuit/virtual circuit (GMPLS) networks, with a bottom-up understanding of the technological details of GMPLS data-plane and control-plane protocols. Since the early nineties, significant investment has been made in developing protocols for high-speed circuit-switched and virtual-circuit networks. The goal of the tutorial is to offer attendees an opportunity to not only learn the basic technological aspects, but also to understand opportunities for how we can enable a successful wide-scale deployment of GMPLS networks. Finally, the tutorial describes actual deployments of GMPLS networks, most of which are research testbeds for Grid computing and eScience projects. The presenter has personal experience in deploying such a research testbed, which is a wide-area network called CHEETAH.

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

T20: Routing in Delay Tolerant Mobile Ad Hoc Networks: Overview and Challenges

Instructor: **Zhensheng Zhang**, San Diego Research Center (SDRC)

This tutorial will review the state of the art in DTN networks, especially routing protocols. We categorize these routing protocols based on information used. For deterministic time evolving networks, three main approaches are discussed: the tree approach, the space and time approach, and the modified shortest path approach. For stochastic time evolving networks, the following approaches are reviewed: the epidemic or random forwarding approach, predication or history based approach (including per contact routing based on one-hop information only and per contact routing based on average end to end information), the model based routing approach as well as approaches which control the movement of certain special nodes. Recent developments in erasure coding and network coding applied to DTNs are also discussed. The tutorial will also identify open research issues and intends to motivate new research and development in this area.

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

T21: On-Demand Enterprise: Virtualization and Grid-Based Mechanisms for Service Continuity

Instructor: **Inder Monga**, Nortel

Siva Subramanian, Nortel

This EntNet tutorial introduces concepts of network virtualization and its interaction with computer, storage virtualization within the Data Center as well as in the context of Grid Computing within the logical boundaries of an Enterprise. The participants will learn how these virtualization techniques can be applied cost-effectively to maintain service continuity in the era of Globalization.

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

T22: Internet Protocol Multimedia Subsystem (IMS) for New Generation Enterprise Services

Instructors: **J-Ch. Grégoire**, INRS-EMT

B. Khasnabish, Verizon Communications

This EntNet tutorial starts with a review of the session initiation protocol (SIP) and its evolution to support the IP multimedia subsystem (IMS) in Enterprise. Status of the Next-generation converged Enterprise networking using IMS is then presented. Service providers' views and the lessons from Blackberry, CENTREX, and alternatives in integration are then carefully reviewed. Finally, the instructors will present the future of service migration using IMS and service oriented architecture (SOA) concept.

WORKSHOPS

Monday, 26 November 2007 • 9:00 am – 12:00 pm

W1: Multi-Sensor Data Fusion

Co-Chairs: **Dr. Syed Aon Mujtaba**, LSI Corporation
Dr. Jack H. Winters, JWC

Multi-sensor data fusion is a concept whereby data collected from multiple sensors is processed and combined in a manner that improves the accuracy of the decision making process compared to that in a single sensor system. While the underlying principle of multi-sensor data fusion is simple (i.e., multiple information sources providing redundancy and diversity), there are several challenges associated with realizing a cost-effective and robust system, which requires a cross-disciplinary approach with joint multi-disciplinary optimization. A system leveraging multi-sensor data fusion techniques will typically consist of an array of sensors, feeding data into a central node that processes and fuses the data to make a decision or an inference. Application of the multi-sensor data fusion concept can be found in both the commercial and military sectors. The first challenge is associated with the design of sensors, which can be either homogeneous or heterogeneous. In complex systems, information may have to be gathered in a variety of forms, such as radio, optical, thermal, and acoustic. The second challenge is the reliable transfer of the data from the sensor nodes to the central node. The sensors may be mobile (and perhaps power constrained) and/or not co-located. The third challenge is the fusion of data from multiple sensors, particularly when they are heterogeneous. Different sensors may experience different noise levels and different operating conditions. Hence, multi-sensor data fusion systems have three main areas of focus for cross-disciplinary research - sensors, networking, and data fusion. Joint optimization of these areas can use signal processing techniques that are well established in communication systems, such as estimation theory, error control coding, and sigma-delta processing. This workshop will explore this theme by inviting subject matter experts in sensor design, network protocol design, and data fusion algorithms.

Monday, 26 November 2007 • 9:00 am – 5:00 pm

W3: Workshop on Security and Privacy in 4G Networks

Co-Chairs: **Prof. Seung-Woo Seo**, Seoul National University
Dr. Anand R. Prasad, DoCoMo Eurolabs

Workshop on Security and Privacy in 4G Networks will bring together security and privacy experts, practitioners, standards developers and others in academia, industry and government. The objective of this workshop is to identify the key issues to be addressed by future research in the areas of security and privacy in 4G networks that will constitute of a new air interface providing higher capacity and increased coverage in the form of multi-hop communication and interworking with existing radio access networks. We believe that having security from the beginning will lead the researchers to develop a realistic 4G solution.

Monday, 26 November 2007 • 9:00 am – 5:00 pm

W4: 1st IEEE Workshop on Enabling the Future Service-Oriented Internet

Co-Chairs: **Michael Devetsikiotis**, North Carolina State University
George Michailidis, University of Michigan

The objective of this workshop is to address network-level as well as application and service-layer topics of analysis, design, monitoring and experimentation. The top-down interplay between services and networking creates unique modeling, design and implementation challenges. The goal of this workshop is to focus the community's efforts in building up this important area by discussing perspective issues and required breakthroughs in research and development. The workshop format will be a combination of original papers, review/white papers, quick "hot topic" presentations, and a panel discussion with participants from industry, the NSF, and academia. This will allow workshop participants to obtain a global perspective of the scope of this area and of the technical challenges associated with it, in a participative and interactive manner.

Monday, 26 November 2007 • 9:00 am – 5:00 pm

W5: 2nd International Workshop on Distributed Autonomous Network Management Systems (DANMS)

Co-Chairs: **Nazim Agoulmine**, University of Evry Val d'Essonne
Anne-Marie Bosneag, Ericsson Ireland Research Centre
Farnam Jahanian, University of Michigan Ann Arbor
Francoise Sailhan, Ericsson Ireland Research Centre

The IEEE DANMS 2007 workshop will provide an opportunity to bring together a broad range of researchers from network management, distributed systems, dependable systems, and autonomic computing, to exchange ideas and promote discussion on research topics in these areas. The workshop will be comprised of technical presentations, a panel session with representatives from industry and academia, and will provide ample opportunities for free discussions on the ideas presented.

Monday, 26 November 2007 • 2:00 pm – 5:00 pm

W2: 8th International Workshop on Optical Networking Technologies

Chair: **Tarek S. El-Bawab**, Jackson State University

Stretching fiber towards the last mile has always been an interesting option for the industry. However, this option was not cost effective until recently. Today, progress in optical technologies brought down the cost of many optical components, devices, and systems, which are instrumental for optical access. Meanwhile, bandwidth-hungry services and demand for triple-play delivery are changing the economics of optical access solutions, which is making a new case for FTTx. This acronym embraces a number of optical access technologies, such as Fiber To The Curb (FTTC), Fiber To The Node (FTTN), Fiber To The Building (FTTB), Fiber To The Home (FTTH), and Fiber To The Premises (FTTP). Today, FTTx relies on Passive Optical Network (PON) and active Optical Ethernet (OE) architectures. In this workshop, we will discuss FTTx and examine the penetration of optical technologies into the access segment of service providers' networks. We will examine several technical, economic, business and market aspects of this topic.

For complete workshop descriptions, visit <http://www.ieee-globecom.org/2007/tuts.html>

Friday, 30 November 2007 • 9:00 am – 12:00 pm

W6: IEEE Workshop on Service Discovery and Composition in Ubiquitous and Pervasive Environments (SUPE)

Co-Chairs: **Jaafar Gaber**, Université de Technologie de Belfort-Montbéliard
Mohamed Bakhouya, George Washington University

This workshop is intended to serve as a forum and bring together researchers and engineers in both academia and industry to exchange ideas, share experiences, and report original works about all aspects of service discovery and composition in ubiquitous and pervasive environments. The main purpose is to promote discussions of research and relevant activities in the design of architectures, algorithms, and applications for UPC environments.

Friday, 30 November 2007 • 9:00 am – 5:00 pm

W8: 2nd IEEE Automotive Networking and Applications (AutoNet) Workshop

Co-Chairs: **Wai Chen**, Telcordia Technologies
Onur Altintas, Toyota InfoTechnology Center

Following the success of the 1st IEEE AutoNet, this one-day workshop seeks to present the latest research results and challenges in vehicle-to-vehicle and vehicle-with-infrastructure communications technologies, and their applications including improved safety, reduced traffic congestion and pollution, smoother driving experience, among others.

Friday, 30 November 2007 • 9:00 am – 5:00 pm

W9: Wireless Mesh and Sensor Networks: Paving the Way to the Future or Yet Another

Co-Chairs: **Neeli R. Prasad**, Center for TeleInfrastruktur (CTIF), Aalborg University

Dr. Paulo T. De Sousa, Head of Sector, Internet of the Future, in the Directorate-General Information Society, European Commission

Dr. C. Skianis, University of Aegean

Wireless systems for industry have mostly used cellular-style radio links, using point-to-point or point-to-multipoint transmission. Traditional wireless formats have liabilities in industrial applications. These include rigid structure, meticulous planning requirements, and dropped signals. In contrast, wireless mesh networks are multihop systems in which devices assist each other in transmitting packets through the network, especially in adverse conditions. You can drop these ad hoc networks into place with minimal preparation, and they provide a reliable, flexible system that can be extended to thousands of devices. Similarly, the self-configuring and self-healing capability, redundancy and scalability, diagnostic monitoring and distributed nature of wireless sensor networks place them among the most important technologies in the 21st century. This workshop will examine the technical and economic challenges for deploying wireless municipal mesh networks and wireless sensor networks.

Friday, 30 November 2007 • 2:00 pm – 5:00 pm

W7: Coding for Data Storage

Co-Chairs: **Marcus Marrow**, Link-A-Media
Bruce Wilson, Hitachi

Simple scaling of component size has been the principal engine of increased storage capacity over the last 50 years. As traditional scaling approaches physical limits of wavelength and thermal stability, the data storage industry is beginning to embrace more exotic and expensive technology to maintain a steady increase in storage density. These changes have sparked a period of renewed invention and improvement in signal processing for storage. The mass deployment of new storage technologies such as perpendicular recording and holographic storage require new coding and detection techniques and the judicious application of existing technology. The application of iterative decoding to storage offers an exciting opportunity to improve storage density across all platforms. More than ever, coding, detection, and other techniques of communications engineering have a real opportunity to improve system performance. This workshop will provide an introduction to signal processing and coding for data storage and a forum for sharing the latest developments in this exciting field.

For complete workshop descriptions, visit <http://www.ieee-globecom.org/2007/tuts.html>



Sunday, 25 – Monday, 26 November 2007

The Mobile Ad-hoc Networking Interoperability And Cooperation (MANIAC) Challenge is a multi-institution competition that explores the tension between cooperation and selfish behavior in wireless self-organizing networks. Each participating team will devise strategies to establish cooperation and avoid and punish uncooperative nodes in the network, to maximize the amount of the team's traffic that is correctly delivered while minimizing resources spent in forwarding other teams' traffic. An API is available to all teams to facilitate forwarding and dropping decisions, for example allowing the node to bypass the routing table. A distributed monitoring solution was developed to collect topology, traffic load, and cooperation information during the competition. For more information on the MANIAC Challenge, including software available for download, visit www.maniacchallenge.org.



IEEE Graduates of the Last Decade

Wednesday, 28 November 2007 • 4:15 pm – 6:45 pm

Chair: **Dr. Irena Atov**, Telstra Corporation

The GOLD session will be made up of two invited talks and a special set of poster presentations focusing on entrepreneurship.

These poster presentations will give graduate students and young professionals an opportunity to learn about the skills and techniques needed for a successful commercialization of research ideas. The session is also aimed at giving attendees an opportunity to mix with successful entrepreneurs in the telecommunications field.

Entrepreneurs or entrepreneurial companies will be able to showcase their ideas in the GOLD session in one of the largest global telecommunications forums.

The invited talks will focus on success factors and issues facing young professionals in the telecommunications industry today.

For further information on the GOLD session visit
<http://www.ieee-globecom.org/2007/GOLDHomePage> 2007.htm

EntNet 2007



Thursday, 29 - Friday, 30 November 2007

The 7th IEEE International Conference on Enterprise Networking & Services (EntNet) is co-located with IEEE GLOBECOM this year. EntNet's popularity continues to grow as the premier forum for a rich diversity of leading telecom experts from industry, universities and government to consider where the industry is going and discuss hot topics in enterprise networking and services, technology solutions and best practices. EntNet will focus on the latest developments in voice, video, data, wireless/mobility, and integrated services. This year's program features Keynote Fred Baker of IETF and Cisco Systems, 8 panel sessions, and 2 tutorials. For more conference information, visit <http://www.ieee-entnet.org/2007/>.

SOCIAL EVENTS

Tuesday, 27 November 2007 • 12:15 pm - 1:45 pm

IEEE GLOBECOM 2007 AWARDS LUNCHEON

Celebrate with your colleagues at this biannual event honoring the achievements of IEEE and IEEE Communications Society members. This event is included with the full conference registration. Additional tickets can be purchased for \$60.00 per person.

Tuesday, 27 November 2007 • 6:15 pm – 7:15 pm

IEEE GLOBECOM 2007 50th ANNIVERSARY CELEBRATION

The IEEE GLOBECOM 2007 Planning Committee invites you to celebrate IEEE GLOBECOM's 50th Anniversary hosted by Dr. Irwin Jacobs (QUALCOMM, Inc.) with an IEEE GLOBECOM Panel Session featuring Roberto de Marca (PUC-Rio), Ann Miller (University of Missouri, Rolla), and Tom Rowbotham (Vesbridge Partners); Trivia Contest with prizes; a Color Guard Performance; and more. The celebration begins immediately following Dr. Jeong Kim's Keynote Presentation. This event is included with the conference registration fee. Accompany guests are welcome to attend.

Tuesday, 27 November 2007 • 7:30 pm - 10:00 pm

IEEE GLOBECOM 2007 WELCOME RECEPTION & EXPO OPENING

The IEEE GLOBECOM 2007 Executive Committee welcomes you to Washington, DC and invites you to join them for the opening of the IEEE GLOBECOM 2007 EXPO. This event is included with the conference registration fee. Accompany guests are welcome to attend.

Wednesday, 28 November 2007 • 7:00 pm – 10:00 pm

IEEE GLOBECOM 2007 CONFERENCE BANQUET

Join IEEE GLOBECOM 2007 General Chair, Jerry Gibbon for a relaxing evening of fine dining and entertainment. This event is included with the full conference registration. Additional tickets can be purchased for \$115.00 per person.



Hillwood Museum

Tuesday, 27 November 2007 • 12:00 pm – 4:00 pm • Price: \$70.00

The museum is the former residence of Marjorie Merriweather Post, cereal heiress, collector and philanthropist. Post was once one of the grande dames of Washington society. She collected art throughout her life, emphasizing only the finest French and Russian objects. The opulent Georgian, 40-room mansion, built in 1926, and subsequent auxiliary buildings, house her collection as well as the turn-of-the-century collection of her father, Charles W. Post, founder of the Post Cereal Company. Her collection of Russian icons, gold and silver pieces, porcelain and Fabergé eggs has been called the most representative outside of the former Soviet Union. The grounds of the estate are equally magnificent including gardens and a greenhouse. [NOTE: Children under the age of 6 are not permitted]



Mount Vernon

Wednesday, 28 November 2007 • 11:00 am – 5:00 pm • Price: \$65.00

At the home of George Washington, you will see gardens and greens as well as the original furnishings placed throughout the Georgian-style manor house. After your tour of the mansion and grounds, guests will board a coach for the return trip along the George Washington Memorial Parkway to Alexandria, Virginia, referred to by many as George Washington's home town. You will see Christ Church, ride by Gadsby's Tavern, Market Square, and the Apothecary Shop.



The National Portrait Gallery's and National Museum of Women in the Arts

Thursday, 29 November 2007 • 12:30 pm – 4:30 pm • Price: \$60.00

The National Portrait Gallery's mission is to collect and display images of "men and women who have made significant contributions to the history, development and culture of the people of the United States." Additionally, the National Portrait Gallery's collections include portraits of all U.S. presidents, more than 5,400 glass-plate negatives from the studios of Mathew Brady and original artwork from more than 1,600 TIME magazine covers.

National Museum of Women in the Arts is the first museum in the world devoted specifically to works of art produced by women throughout the centuries and from around the world. The Museum is housed in a Renaissance Revival building built in 1907. The permanent collection dates back to the Renaissance and includes not only examples of Western Art, but also Native works from America and abroad. Following your tour of the National Museum of Women in the Arts, guests will enjoy lunch in the NMWA café.

GENERAL INFORMATION

ABOUT WASHINGTON

Washington, DC is a city of colorful and diverse neighborhoods, filled with hip boutiques, galleries, historic homes and small museums, urban parks and spectacular gardens.

(Courtesy of Washington, DC Convention & Tourism)
<http://www.washington.org>

TRANSPORTATION

The two major airports serving Washington, DC are Ronald Reagan Washington National Airport and Dulles International Airport.

Ronald Reagan Washington National Airport –
<http://mwaa.com/reagan>

The fastest and easiest way to get to the Hilton Washington Hotel from National Airport is by taxi (approximately \$20.00). The approximate travel time to the hotel is 20 minutes. Taxicab stands are conveniently located near the Arrivals (baggage claim) exits of each terminal. Dispatchers at each stand will help you select a taxicab based on your destination in Washington, DC. For information, see http://mwaa.com/reagan/parking_transportation_4/ground_transportation_2/taxi_rates

Washington Dulles International Airport –
<http://mwaa.com/dulles>

The Dulles International Airport is located approximately 45 minutes from the Hilton Washington Hotel. A taxi ride will cost \$55.00 per person one way.

Metrorail Service is available at both airports. For ticket information, call 202-637-7000, TDD 202-638-3780 or visit <http://www.wmata.com/>

Super Shuttle Bus Service is available at both airports but you are required to make advance reservations. Super Shuttle door-to-door service is available at the Airport. Shuttles operate on a shared ride-on demand basis. For more information, call 800-BLUEVAN or go to www.supershuttle.com

Washington Flyer Taxicabs serve Dulles International Airport exclusively with 24-hour service to and from the airport. For more information, visit the website http://mwaa.com/dulles/parking_transportation_3/ground_transportation/washington_flyer_taxi

Dulles Taxi & Car Service - To and From Dulles Airport Reservations: Call 877-772-5466
 Visit www.AirportConnection.com

HOTEL INFORMATION

The Hilton Washington Hotel enjoys a magnificent garden setting that over looks the capital city's impressive skyline. Conveniently located on fashionable upper Connecticut Avenue and only a quarter of a mile from the Dupont Circle Metro station, the hotel sits just minutes from Georgetown, Adams-Morgan, Embassy Row, the Washington business district, and all local points of interest.

The Hilton Washington Hotel is located at 1919 Connecticut Avenue, North West Washington, DC

Conference Sleeping Room rates are as follows:

Single: \$179.00 + taxes
 Double: \$199.00 + taxes
 \$25.00 charge for each additional person.

Reservations must be received by Monday, 5 November 2007.

Reservations: Call 202-797-5820 or 888-DC-HILTON
 Fax Reservations: 202-797-5755
 Online Reservations:
http://www.hilton.com/en/hi/groups/personalized/dc/awhhh_je/index.jhtml

Registration Form

Registrant(s) Information (Please print clearly)

*ARE REQUIRED FIELDS & MUST BE COMPLETED

*Family/Surname		*Personal Name	Nickname (Badge Name)
*Company, University or Other Affiliation			
*Mailing Address		*P.O. Box / Mail Stop	
*City	*State/Province	*Postal Code	*Country
*Phone Number	*Fax Number	*Email Address	
Emergency Contact Name		Phone Number	

*IEEE Membership Number

Are you a member of an IEEE sister society? (circle all applicable): AEIT CCIS CIC CIE CIEE EZS HTE IEICE IETE KICS LITKA POPOV REV SBIT SEE SEEI SR VDE

Do you have any special needs? (circle all applicable): Wheelchair Access Audio Visual Vegetarian Other: _____

Registration Category: (Check all that apply):

- ☐ Technical Paper Presenter
☐ Workshop Paper Author/Presenter
☐ Technical Paper Author
☐ Tutorial Presenter
☐ Attendee
☐ EXPO Technical Session Chair (D&D or Access)
☐ EXPO Technical Session Presenter (D&D or Access)

How did you hear about IEEE GLOBECOM? (Check all that apply)

- ☐ IEEE GLOBECOM 2007 Web Site
☐ Other Professional/Industry Web Site
☐ Advance Program
☐ Colleague
☐ Advertisement, where _____
☐ Email
☐ Other: _____

Organizational Status: (Check all that apply)

- ☐ Industry
☐ Government
☐ Academia
☐ Other: _____

AUTHOR REGISTRATIONS

ON/BY 9 AUGUST

RG-01 – Presenter – Full IEEE ComSoc Member	\$783	\$ _____
RG-02 – Presenter – Full IEEE Member *	\$825	\$ _____
RG-03 – Presenter – Limited IEEE ComSoc Member	\$608	\$ _____
RG-04 – Presenter – Limited IEEE Member *	\$650	\$ _____
RG-05 – Presenter – Full Non Member ** (see pg 3 for membership offer)	\$1055	\$ _____
RG-06 – Presenter – Limited Non Member ** (see pg 3 for membership offer)	\$880	\$ _____

PLEASE DO NOT SHARE YOUR REGISTRATION CONFIRMATION CODE WITH ANYONE ELSE. ALTHOUGH THE CODE ENABLES SUBMISSION OF UP TO THREE PAPERS, IT CAN ONLY BE USED ONCE, BY YOU, TO CREATE ONE AUTHOR ACCOUNT FOR THESE SUBMISSIONS.

ATTENDEE MEMBER REGISTRATIONS

ON/BY 31 OCTOBER

AFTER 31 OCTOBER

RG-07 – Full IEEE ComSoc Member	\$783	\$903	\$ _____
RG-08 – Full IEEE Member *	\$825	\$945	\$ _____
RG-09 – Limited IEEE ComSoc Member	\$608	\$728	\$ _____
RG-10 – Limited IEEE Member *	\$650	\$770	\$ _____
RG-11 – EXPO Technical Program Only IEEE ComSoc Member	\$465	\$545	\$ _____
RG-12 – EXPO Technical Program Only IEEE Member *	\$505	\$585	\$ _____
RG-13 – 1 Day IEEE ComSoc Member (TUE WED THURS FRI (CIRCLE DAY))	\$428	\$518	\$ _____
RG-14 – 1 Day IEEE Member (TUE WED THURS FRI (CIRCLE DAY) *)	\$470	\$560	\$ _____
RG-15 – IEEE Life Member	\$50	\$50	\$ _____
RG-16 – Student Member (FULL TIME STUDENTS ONLY)	\$300	\$350	\$ _____

ATTENDEE NON-MEMBER REGISTRATIONS* (see pg 3 for membership offer)

RG-17 – Full Non Member	\$1055	\$1225	\$ _____
RG-18 – Limited Non Member	\$880	\$1050	\$ _____
RG-19 – EXPO Technical Program Only Non Member	\$615	\$725	\$ _____
RG-20 – 1 Day Non Member (TUE WED THU FRI (CIRCLE DAY))	\$620	\$740	\$ _____

OTHER REGISTRATIONS

RG-21 – EXPO Only	\$50	\$50	\$ _____
RG-22 – Enterprise Networking (EntNet) Keynote and Panels Event Only	\$0	\$0	\$ _____

☐ Check here if you plan to attend this event

Registration Total: \$ _____

What's included with registration is listed on Page 2

Full Registration Includes: Welcome Reception, Plenary, Technical Sessions, Access '07 Executive Business Forum, D&D Forum, EntNet Keynote and Panels, GOLD Program, Access to EXPO, Awards Luncheon, Conference Banquet, and CD-ROM Record.

Limited Registration Includes: Welcome Reception, Plenary, Technical Sessions, Access '07 Executive Business Forum, D&D Forum, EntNet Keynote and Panels, GOLD Program, Access to EXPO, and CD-ROM Record.

EXPO Technical Program Only Includes: Welcome Reception, Plenary, Access '07 Executive Business Forum, D&D Forum, EntNet Keynote and Panels, GOLD Program, and Access to EXPO.

Accompanying Guest Includes: Welcome Reception, Plenary on Monday, and Access to EXPO.

Tutorial/Workshop Registration Includes: Tutorial/Workshop and Access to EXPO.

EntNet Keynote and Panels Registration Includes: EntNet Keynote and Panel sessions only.

Life Member/Student/ One Day Registration Includes: Welcome Reception, Plenary, Technical Sessions, Access '07 Executive Business Forum, D&D Forum, EntNet Keynote and Panels, GOLD Program, Access to EXPO, and CD-ROM.

TUTORIALS & WORKSHOPS

You may register for Tutorials and Workshops without registering for the conference. Tutorials and Workshops are not included in any conference registration category.

HALF DAY TUTORIALS – Include Tutorial Notes and Tea/Coffee Breaks

Tutorial On/By 31 October = \$250 each

Tutorial After 31 October = \$300 each

Quantity # _____ @ \$250 = \$ _____

Quantity # _____ @ \$300 = \$ _____

Please select which Tutorials you would like to attend below. For more information about the tutorials, please visit the IEEE GLOBECOM 2007 website.

Monday, 26 November Morning Tutorials (9:00am – 12:00pm)

- ☐ T1: Spectrum Policy & the Wireless Engineer: Navigating Regulatory Maze
☐ T2: Code Designs for Multi-Terminal Communication Networks
☐ T3: A Crash Course in Wireless Meshes

- ☐ T4: Fundamentals of UWB Systems
☐ T5: Adaptive Processing & Cross-Layer Design in Wireless Communications

Monday, 26 November Afternoon Tutorials (2:00pm – 5:00pm)

- ☐ T6: Key Topics in Cognitive Radio Networks
☐ T7: The Next Generation CDMA Technologies
☐ T8: Standardization of MIMO-OFDM Technology

- ☐ T9: IP Multimedia Subsystem (IMS): A Platform for Convergence and Next Generation Services
☐ T10: Security Issues in Sensor Networks

Friday, 30 November Morning Tutorials (9:00am – 12:00pm)

- ☐ T11: Cognitive Radio Networks for license-exempt use of TV Spectrum
☐ T12: Next Generation Wireless Technologies: High Throughput WiFi, WiMAX & UWB
☐ T13: Multiuser MIMO Techniques for Wireless Systems

- ☐ T14: Automotive Networking & Telematics Applications
☐ T15: Web Security

Friday, 30 November Afternoon Tutorials (2:00pm – 5:00pm)

- ☐ T16: MIMO Detection: Theory & Practice
☐ T17: WiMAX: An Advanced Broadband Wireless System
☐ T18: Next Generation Cellular Networks: Features & Algorithms
☐ T19: Generalized Multi-Protocol Label Switched (GMPLS) Networks

- ☐ T20: Routing in Delay Tolerant Mobile Ad Hoc Networks: Overview & Challenges
☐ T21: On-Demand Enterprise: Virtualization & Grid-Based Mechanisms for Service Continuity
☐ T22: IMS for New Generation Enterprise Services

WORKSHOPS – Includes Proceedings, Lunch (Only for Full Day Workshops), and Tea/Coffee Breaks

	ON/ BY 31 OCTOBER	AFTER 31 OCTOBER	
Monday, 26 November Half Day			
W1: Multi-Sensor Data Fusion (9:00am – 12:00pm)	\$250	\$300	\$ _____
W2: 8 th International Workshop on Optical Networking Technologies (2:00pm – 5:00pm)	\$250	\$300	\$ _____
Monday, 26 November Full Day (9:00am – 5:00pm)			
W3: Workshop on Security & Privacy in 4G Networks	\$350	\$400	\$ _____
W4: Enabling the Future Service-Oriented Internet	\$350	\$400	\$ _____
W5: 2 nd International Workshop on Distributed Autonomous Network Management Systems	\$350	\$400	\$ _____
Friday, 30 November Half Day			
W6: Service Discovery & Composition in Ubiquitous & Pervasive Environments (9:00am – 12:00pm)	\$250	\$300	\$ _____
W7: Coding for Data Storage (2:00pm – 5:00pm)	\$250	\$300	\$ _____
Friday, 30 November Full Day (9:00am – 5:00pm)			
W8: 2 nd IEEE Automotive Networking & Applications (AutoNet) Workshop	\$350	\$400	\$ _____
W9: Wireless Mesh and Sensor Networks: Paving the way to the future of yet another	\$350	\$400	\$ _____

Tutorial/Workshop Total \$ _____

Name: _____

* Includes Complimentary Full Year IEEE ComSoc Membership ☐ Check here if you do not wish to receive this Complimentary offer

****IEEE COMSOC AFFILIATE MEMBERSHIP OFFER****

If you are registering for IEEE GLOBECOM 2007 as a Non Member, you can take advantage of our offer to become an IEEE Communications Society Affiliate Member. The cost is \$104 for a Full Year IEEE Communications Society Affiliate Membership.

☐ Check here to receive your membership code.

ADDITIONAL ITEMS

- ☐ Qty _____ EX-01 – Awards Luncheon - \$60
☐ Qty _____ EX-02 – Conference Banquet - \$115
☐ Qty _____ EX-03 – Additional Conference Record (CD-ROM) \$60
☐ Qty _____ EX-04 – Overlength Page Charge (over 5 pages) \$100

TOURS

- ☐ Qty _____ OT-01 – Hillwood Museum and Gardens \$70 – Tuesday, 27 November, 12:00pm-4:00pm
☐ Qty _____ OT-02 – Tour of Mount Vernon \$65 – Wednesday, 28 November, 11:00am-5:00pm
☐ Qty _____ OT-03 – Tour of the National Portrait Gallery & National Museum of Women in the Arts \$60
 Thursday, 29 November, 12:30pm-4:30pm

Optional Items Total \$ _____

Refund Policy: All refund requests must be in writing to IEEE CMS, by emailing globecom07reg@ieee.org.
 All cancellations will be subject to a \$100 cancellation fee. **No refunds will be given after Wednesday, 31 October 2007.**

Registration Total

Tutorial/Workshop Total

Optional Items Total

Total Remittance

\$ _____

\$ _____

\$ _____

\$ _____

METHOD OF PAYMENT:

☐ CHECK Issued in US Dollars (Payable to: IEEE/2007 GLOBECOM)

There is a \$15 service fee per transaction required for Payments by Wire Transfer and Purchase Order.

☐ WIRE TRANSFER - \$15 - Please contact globecom07reg@ieee.org for Wire Transfer instructions.

☐ PURCHASE ORDER - \$15 - Please attach a copy of the purchase order if possible

☐ Visa ☐ MasterCard ☐ American Express ☐ Diners Club ☐ Discover

Card Number _____ Expiration Date _____

Name on Card _____ Authorized Signature _____

Mail or Fax Completed Registration Form & Payment To: IEEE/CMS: Caroline Colabaugh

445 Hoes Lane, Piscataway, New Jersey 08855 USA

Tel: +1 732 981 3437 Toll Free (in US or Canada): +1 800 810 4333

Fax: +1 732 465 6447 E-mail: globecom07reg@ieee.org

IEEE GLOBECOM 2007 PATRONS AS OF SEPTEMBER 2007

On behalf of IEEE Communications Society and the IEEE GLOBECOM 2007 Planning Committee, I would like to take this opportunity to invite your company's support of IEEE GLOBECOM 2007. From the generosity of companies like yours, the IEEE GLOBECOM 2007 Planning Committee will reach the impressive milestone for celebrating its 50th Anniversary. This year's conference celebration will be an exciting event, one sure to draw engineers, scientists, and leaders from across the globe.

Tim Weil
Booz Allen Hamilton
Patronage Chair, IEEE GLOBECOM 2007



IEEE COMMUNICATIONS EXPO EXHIBITORS AS OF SEPTEMBER 2007

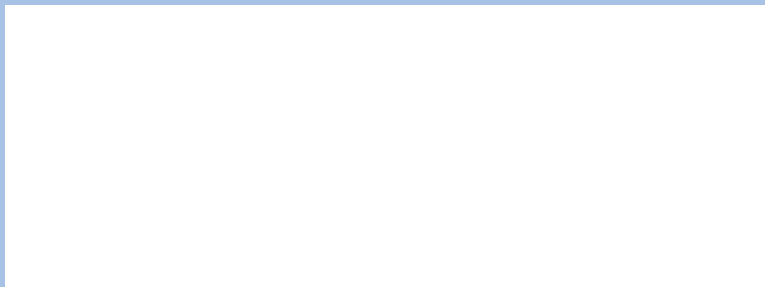


For further details on how to Exhibit at the IEEE Communications Expo, please contact Connie Shaw at J. Spargo and Associates at 703-631-6200 ext. 3905.



IEEE
445 Hoes Lane, PO Box 459
Piscataway, NJ 08855-0459 USA

NON-PROFIT ORG
US POSTAGE
PAID
PISCATAWAY, NJ
PERMIT NO. 52



ATTEND IEEE GLOBECOM 2007

Featuring the IEEE COMMUNICATIONS EXPO
THE LATEST IN TELECOMMUNICATIONS INNOVATION

www.ieee-globecom.org/2007

 **IEEE**
www.ieee.org

 IEEE
COMMUNICATIONS
SOCIETY
www.comsoc.org