

AGENDA

TUESDAY 9:00 am - 12:00 noon

Room Salon 7 - EP1 Executive Panel – The Future of the Internet in Education & Training

Chair: Dr. Dale Harris, *Stanford University*

Panelists: Tim Corsmo, *Applied Materials*

Parvati Dev, *Stanford School of Medicine*

Joe Khoury, *LabMentors, Inc.*

Robert Ubell, *Stevens Institute of Technology*

Abstract: The advent of the internet and the worldwide web have unleashed a tidal wave of new opportunities in education and professional training. Where is it all headed? This panel will discuss one aspect of that question. The panel will address the current state of the art in internet facilitated distance learning and in particular, how current internet technology limits the possibilities. The panel will emphasize the future of online education and training as expected improvements in internet performance occur. Examples will be given in traditional academic courses, in advanced hands-on computer and communications labs, and in remote surgical training requiring the support of three dimensional video and the experience of touch and feel.

Room A1 - S1 Seminar – Soft Computing Applications for Mobile Communications

Mobile Devices- Dr. Suthikshn Kumar, *Larsen & Toubro Infotech*

Bio: Suthikshn Kumar is currently Project Manager at Larsen & Toubro Infotech Limited. He studied at Bangalore University, Indian Institute of Technology and University of Melbourne where he received his B.E., M.Tech, and Ph.D. degrees respectively. His research interests are in soft computing applications for communication and information processing.

Abstract: In this session, the speakers explore the design and development of some innovative applications of soft computing for mobile communication. The first talk discusses several innovations using soft computing for mobile devices such as Smart Volume Tuner and Voice dialling applications."

Mobile Networks- Dr. Johnson P. Thomas, *Oklahoma State University*

Bio: Johnson P Thomas is an Assistant Professor of Computer Science at Oklahoma State University, Tulsa. He obtained his B.Sc from the University of Wales, Masters from the University of Edinburgh, Scotland and Ph.D from the University of Reading, England. His research interests are in Computer Security and Wireless Networks.

Abstract: In the second talk, we will propose an adaptable wireless communications architecture for Quality of Service (QoS) based on soft computing techniques. To achieve adaptability end-to-end feedback is employed to provide information about current network conditions. We will also look at the adaptation at the different layers of the protocol stack to achieve QoS.

Room B1 - S2a Seminar – Home Networking (two half day sessions)

Dr. Narisa Chu, *CWLab International*

Abstract: This workshop will examine home networking used by a consumer in a place where a service provider's justification of value might be in doubt. Home networking can be developed from a variety of devices and access methods. This workshop will explain the prevailing industry standards, technologies and products. User requirements for home networking will be scrutinized. Choices of implementation and deployment will be discussed based on power line, copper wire, and cable distributions, as well as IEEE 802.11 and 802.16 related broadband wireless networks. A legitimate modeling methodology with capabilities focusing on the consumer's buy-in can determine the fate of the proliferating network standards, technologies and products. A model to achieve an optimized home network will be proposed and discussed.

Room C1 - IP1 Individual Papers – System Level Design & Development

• **Intrusion Prevention System**

- Dr. Yao-Min Chen, *WatchGuard Technologies*

• **Design of Dual Use Satellite Comm. System**

- Paolo Ricci, *Consultant*

- Dr. Mohamed A. Tarabzouni, *KACST*

• **Optical Packet Switch System Design - CANCELLED**

- Dr. Wim Vanderbauwhede, *Univ. Stratheyde*

• **Safe Home Ticketing Through Internet**

- Dr. Luis de la Cruz, *Polytechnic Univ. of Catalonia*

• **Achieving Carrier Class Availability**

- T. DeLurio & T. O'Brien, *Summit Microelectronics*

AGENDA

TUESDAY 2:00 pm - 5:00 pm

Room Salon 7 - EP2 Executive Panel – Telecom in Asia

Chair: Terry Kero, *President Myaani*

Panelists: Dr. Han-Suk Kim, *President Pacific Telecom Council and VP Korea Telecom*
Dr. JingTong Lin, *President Beijing University Post & Telecom*
Dr. T. Russell Hsing, *Executive Director Telcordia*
Dr. Xue-Gen Cao, *CTO Global China Group*
Dr. Piu Bill Wong, *VP Hong Kong Applied Science & Technology Research Institute*

Abstract: This panel will discuss the current and future telecommunications in Asia, including the services, products and some unique aspects such as telecom education and research in China.

Room A1 - S3 Seminar – Wireless System-on-a-Chip Design

Chair: Dr. Dilip Krishnaswamy, *Intel Corporation*

Presenters: David Flynn, *ARM Ltd.*
Rajesh Gupta, *UC San Diego*
Teresa H Meng, *Stanford University*
David Witt, *Texas Instruments*
Kris Fleutner, *ARM Ltd*
Dave Flynn, *ARM Ltd*

Abstract: This session will discuss the overall challenges facing the wireless industry from a System-on-chip design perspective. The presentations at the session will target wireless communications and application processor designs, and WLAN system designs. They will cover a range of topics that impact wireless SoC designs including architecture, efficient power and energy management, process, scaling of geometries and voltages, analog/digital/mixed-signal design, validation and testing, reliability, noise and error tolerance, RF-related issues, physical interconnects, performance, component-integration and interconnection issues, Hardware-Software codesign tradeoffs, and design automation.

Room B1 - S2b Seminar – Home Networking (2nd half day session)

Dr. Narisa Chu, *CWLab International*

Bio: Dr. Narisa Chu has 30 years of experience in Communications and Power industries. She has worked in Bell Labs, Comcast, Motorola, Rockwell, Tellabs, in the field of digital video, data and voice telecommunications. She is currently heading an effort in CWLab International (Devon, PA) applying advanced broadband and wireless technologies to product development. She has published over 30 papers in telecommunications (some translated into Chinese and Japanese.)

Room C1 - IP2 Individual Papers – Wireless Design & Development

- **Capacity and Coverage Improvements of Adaptive Antennas**
 - Dr. s E. Linskog, *Array, A. Aksu, Newfield Wireless,*
 - M. Trott, *HP*
- **Planning & Design Tool for WLAN**
 - Dr. Pedro Sebastiao, *Portuguese Telecomm*
- **Interworking IEEE 1394 to Wireless LAN**
 - Vishnu Ram, *Motorola*
- **Transmit Diversity Techniques in Wireless**
 - Tomonobu Sato, *Hitachi*
- **SystemC-based Methodology for UMTS Physical Layer**
 - Dr. Guido Post, *Synopsys IP & Design Services*
- **Broadband Access through Optical Rings via WiFi**
 - Sushil K. Singh, *UCSD*

AGENDA

WEDNESDAY 9:00 am - 12:00 noon

Room Salon 7 - S4 Seminar – DSL Enabled Consumer Applications

Chair: Dr. Peter Chow, *Texas Instruments*

Presenters: Paul Harrington, *Westell, Inc.*
Bill Santini, *Texas Instruments*
Pasquale (Pat) Romano, *2Wire*
Behrooz Rezvani, *Ikanos*

Abstract: Digital Subscriber Lines (DSL) has become arguably the most promising broadband delivery mechanism in the world. Over 36 million subscribers worldwide by the end of 2002 are using DSL for instant access to the Internet. It is fueling an explosion of consumer electronics applications worldwide that demand a high rate of data transfer, ranging from voice/audio to data to video. The most popular form of consumer DSL is Asymmetric Digital Subscriber Lines (ADSL). ADSL can be realized with highly integrated silicon implementations. We focus on the implementation of the latest generation of ADSL CPE chipsets and various applications enabled by ADSL for a connected home, ranging from System on Chip (SOC) implementation of ADSL CPE modems, to WLAN (802.11x) enabled ADSL routers and gateways, to VoIP over DSL, to switched digital video over DSL.

Room A1 - S5 Seminar – Voice Over IP and Wireless Appliances

Edward Morgan, *Texas Instruments*

Bio: Mr. Morgan is the Executive Director, R&D, for Texas Instruments' voice over packet group. He has over 20 years of experience in the design and development of digital communications systems at Telogy Networks and AT&T Bell Laboratories. He holds an M.Sc. degree in electrical engineering from Drexel University and an MBA from Purdue University.

Abstract: The WLAN market has proven that it can effectively handle data services. Now, it must show that real-time voice traffic can be supported as well. This tutorial will discuss the value of delivering integrated voice and data services on next-generation VoIP appliances, and explore some of the challenges that designers will face, including QoS, authentication, and roaming issues, that will help make VoIP services a reality on wireless networks and appliances. This tutorial will also examine the solutions being presented by industry professionals and standards bodies, and address the convergence of these services with cellular networks.

Room B1 - S6a Seminar – Metro Ethernet Technology (three half day sessions)

Chair: Paul Bottorff, *Nortel Networks*

Abstract: This will be a 1.5 day session chaired by Paul A. Bottorff who is technical co-chair of the Metro Ethernet Forum (MEF). The session will be divided into 4 parts where specific aspects of the Metro Ethernet Network will be presented. The presentations will be made by invited speakers arranged by the chair. The session will begin with an introduction and technology overview of Metro Ethernet Networks. This introduction will present the current changes taking place in Metro networks as they move from single service voice networks to multi-service data, voice, and video networks. It will introduce the key concepts motivating the development of Metro Ethernet Networks (MENs) and the role of Ethernet Services play in the transition to a data centric Metro infrastructure. After the introduction, 3 sessions will address issues on Ethernet Service Creation, Transport Technologies for MENs, and Management Systems for MENs. These three sessions will emphasize carrier grade MENs. (continued on next page)

Room C1 - IP3 Individual Papers – Component Level Design & Development

- **Baseline Viterbi Extension Coprocessor on Embedded DSP**
- S. Parthasarathy, *STMicroelectronics*
- **Techniques to Improve mips/mw Ratio using Embedded DSP**
- A. Risso, *STMicroelectronics*
- **Chip Design for Residential Multi-Service Switch**
- Dr. T. Ji & S. Song, *Wilfrid Laurier Univ.*
- **Design for Carrier Class Echo Cancellor**
- Dr.s A. Bist & N. Bershad, *Intel*
- **Modeling of RF Mixer Devices**
- Dr. P. Balaban, *Brooklyn Poly*, D. Stolarz, *Cadence*
- **Software Defined Radio & Operating Systems**
- Dr. N. Chu, J. Yau, *CWLab International*,
- Dr. J. Liu, *Sandbridge Technologies*

AGENDA

WEDNESDAY 2:00 pm - 5:00 pm

Room Salon 7 - S7 Seminar – Advances in DSL Technology

Chair: Dr. William Abbott, *Texas Instruments*

Presenters: John M. Cioffi, *Stanford University*

George Hawley, *Valo, Inc.*

James Aslanis, *Texas Instruments*

Marcos Tzannes, *Aware, Inc.*

Frank Ploumen, *Alcatel*

Gene Edmon, *Executive Director, SBC Communications, Inc.*

Abstract: Continued growth of Digital Subscriber Line (DSL) services will be fueled by the introduction of new technologies that provide higher data rates, greater subscriber coverage, more symmetrical services, and lower operator costs. In this session, we focus on DSL technology such as Dynamic Spectrum Management (DSM) that improves overall network capacity, line bonding techniques that provide a cost effective way of achieving higher data rates, extensions of Asymmetric Digital Subscriber Line (ADSL) that provide higher data rates and service at greater distances, and architecture enhancements and new features such as single-ended line testing (SELT) that lower costs for operators and ultimately end customers.

Room A1- S8 Seminar – Open Basestation Architecture Initiative (OBSAI)

Chair: Dr. Joseph Cleveland, *Samsung Telecom*

Presenters: Anu Appaji, *Samsung Telecom*

Louis Luneau, *Radical Horizon*

Dr. Peter Kenington, *Andrew Technology Centre*

Andrew S. Wright, *PMC-Sierra*

Abstract: The rapid growth of wireless services has occurred in large measure from efficiencies resulting from the global standardization of the air and wireline interfaces. The Open Base Station Architecture Initiative (OBSAI) extends this concept to the base transceiver station (BTS). The OBSAI family of standards will allow transceiver module manufacturers to offer products designed and developed to a single hardware interface specification. The papers in this session will cover an overview of the OBSAI interface standards, the standardization of technology functions, and the flexibility to adopt new technologies as a means to significantly reduce BTS costs.

Room B1- S6b Seminar – Metro Ethernet Technology (2nd half day session)

Chair: Paul Bottorff, *Nortel Networks*

Abstract (continued): The session on Ethernet Service Creation will address issues like traffic control for Metro Ethernet Service creations, security for Metro Services, Metro Ethernet Service characteristics and Service Level Agreements (SLAs), etc. The session on MEN transport technologies will address issues like the trade-offs between IEEE 802 transport systems and ITU Generic Frame Protocol, the use of MPLS for link and node protection, the current trends in IEEE Provider Bridges, fairness in IEEE 802.17 (RPR), etc. The final session will address issues in management of MEN networks including generic element management systems, layered OAM management models for service assurance, fault isolation in MEN networks, etc.

Room C1 - IP4 Individual Papers – Component Level Design & Development

- **Parallel Packet Receiving/Transmitting on N/W Processor**

- D. Meng, D. Tallam Unaik & D. Chou, *Intel*

- **Overcoming Packet Transfer Bottlenecks at 40Gb/s**

- A. Cosoroaba & K. Tan, *T-Ram Inc.*

- **High Efficient Driver Circuits for Pump Laser**

- Haitao Sun, *Nortel*

- **Development of a Conceptual Word Translation Tool**

- Dr. Judy Boggess, *Cornell Univ.*

- **Communication Protocol for WDM Star-Coupled Network**

- X. Huang & M. Ma, *Nanyang Tech. Univ.*

- **Space-Time Cross-Correlation Model and Simulator**

AGENDA

THURSDAY 9:00 am - 12:00 noon

Room Salon 7 - EP3 Executive Panel – Government Funded Development

Organizer: Dr. Shri Goyal, *St. Petersburg College*

Co-Chairs: Dr. Ann Miller, *University of Missouri-ROLLA*

Dr. Louise Griffin, *University of Massachusetts*

Panelists: Dr. Vital Rao, *National Science Foundation*

Dr. Daniel J. Clancy, *NASA Ames Research Center*

Dr. Dennis McGregor, *Office of Naval Research*

Dr. Spyros Kaoidaris, *Information Society, European Commission*

Dr. David Honey, *Advanced Technology Office, DARPA*

Abstract: This will be an interactive session with the participation of invited Program Directors from key funding agencies. The agency executives will present high potential technologies and burning issues being actively funded for research and development. Participants will have an opportunity to interact, meet and network with these agency presenters. The format will consist, first, of Panel Member presentations, followed by an interactive discussion and question/answer session.

Room A1- S9 Seminar – Software Defined Radio

Paul Burns, *Simplexity Communications*

Bio: Paul Burns is the principle consultant and owner of Simplexity Communications, an independent consultancy company dedicated to SDR. He is the author of the Artech House best-seller "Software Defined Radio for 3G". Prior to this he played pivotal roles with the SDR start-up Advanced Communications Technologies and NEC. Paul has an Electronics Engineering degree from the University of South Australia.

Abstract: If you are a student, engineer or manager interested in learning more about software defined radio, then this seminar is one you must attend. The session covers the basic principles of the technology and its potential as well as delving into many areas of detailed design. The 3G air-interfaces for cdma2000 and UMTS/WCDMA are considered however the principles you will learn can equally be applied to any air-interface including those used for broadcasting and military communications. Topics include, hardware & software architecture, RF system design, ADC's, DAC's, DDC's, DUC's, DSP's, capacity improving algorithms, smart antennas, EDA tools and the future of SDR.

Room B1 - S6c Seminar – Metro Ethernet Technology (3rd half day session)

Chair: Paul Bottorff, *Nortel Networks*

Bio: Paul A. Bottorff is VP, Director, Co-Chair of the Metro Ethernet Forum (MEF) technical committee and a member of the MEF board of directors. Paul is employed by Nortel Networks where he is Director of Switching Architecture for Nortel Networks advanced research unit. As a founder of the MEF, Mr. Bottorff has worked to develop and specify both Metro Ethernet Networks. For the last 20 years Paul has been a technologist and visionary of the networking industry. Starting in the early 1980s with the development of the first Ethernet products at Bridge Communications, Inc, Paul went on to advance the state of the art working on the development and standardization of FDDI, ATM, and 10 GE WAN. Paul is the inventor of 10 GE WAN and has carried the banner of LAN/WAN integration at the IEEE 802 standards committees. Paul is a member of the IEEE. He received his BS from University of Wisconsin Madison.

Room C1- S10 Seminar – OSS Issues in Configuring Converged IP Services

Dr. Seyhan Civanlar, *Lemur Networks*

Bio: Dr. Civanlar is the co-founder and CTO of Lemur Networks. Before that, she was with Coreon, as vice president of internet technology, and with AT&T Labs for 13 years. She holds an M.Sc degree from the Middle East Technical University in Ankara, Turkey, and a doctorate from the North Carolina State University, both in electrical and computer engineering.

Abstract: This tutorial will address how to make a completely automated end-to-end service provisioning flow a reality. Attendees will learn fundamental issues for configuring voice and data services on cable networks, including: Provisioning per-service security and QoS options; Monitoring and reporting resource utilization on shared HFC; Handling complex naming conventions and name resolutions; Scaling to millions of users and applications; Supporting a shared information model to eliminate incoherent and redundant copies of the same data across OSSs such as ordering, billing, and provisioning systems; Sharing data consistently across OSSs; key IP server components; etc.

AGENDA

THURSDAY 2:00 pm - 5:00 pm

Room Salon 7- S14 Seminar – Next Generation Enhanced Services

Chair: Dr. Seshadri Mohan, *CTO IP SerVoniX*

Bio: Dr. Mohan is the founder of IP SerVoniX. Previously, he worked as the CTO of Telsima, CTO of Comverse, Senior Scientist at Telcordia, and Associate Professor at Clarkson and Wayne State Universities. Dr. Mohan has served on the editorial board of IEEE Surveys and IEEE Personal Communications Magazine.

Abstract: New capabilities are now emerging within the network, the edge, as well as end user terminals. New IP-based systems include soft switches, media servers and media gateways and routers with QoS. Wireless handsets are now available with multimedia capabilities. Carriers are now offering enhanced services that include picture transmission, music and files downloading, and multimedia messaging, to name a few. These new developments enable carriers to easily move towards a converged network that combines the potential of a packet-based network with that of the legacy telephone network. This session provides insights into these developments that enable new IP-based enhanced services to be offered by carriers and enterprises.

Room A1 - S11 Seminar – Intellectual Property: What, Why & Protection!

John Kennedy, *Esq., Dorsey & Whitney LLP*

Bio: An Intellectual Property Attorney with Dorsey & Whitney LLP, John specializes in securing and enforcing patents for telecommunications, interactive television, semiconductors, business methods, and software clients. A frequent lecturer on IP matters, John has a law degree (University of Denver 1996), MBA (University of Colorado 1992), and an Electrical Engineering degree (Kansas State University 1989).

Abstract: With the rise of the information economy, the importance in recognizing, protecting and exploiting a company's or an individual's Intellectual Property (IP) is often of paramount importance. Engineers and developers are often at the leading edge when developing IP. This presentation will include a discussion of IP (as pertinent to the developer). Specific topics will include what IP is and is not, how IP fits into a corporate structure, how IP is protected by law as patents, trade secrets, copyrights/digital rights and trademarks (time permitting).

Room B1 - S12a Seminar – Security and Service Assurance at the Network Edge - CANCELLED

Jim Hourihan, *Acme Packet*

Abstract: As the IP networks evolution occurs, the edge of the network plays an increasingly important role. To meet the new requirements at the edge, service providers must deploy session border controllers – specialized network equipment that provides the necessary control functions to enable high quality interactive communications across IP networks that address security and service assurance requirements for interactive session-based communications. This presentation will discuss in detail the security and service assurance (including revenue & profit assurance) requirements for session based communications.

S12b Seminar – Wireless World Research Forum (WWRF) and Challenges for Beyond 3G

Chair: Dr. Sudhir Dixit, *Nokia Research Center*

(Note: Session length 2-5pm)

Abstract: This panel session will include 5 presentations and a Q&A:

- WWRF Overview
- Human Perspective
- Service Architecture
- Cooperative and Ad hoc Networks
- New Radio Interfaces, Relay-Based Systems, and Smart Antennas

Room C1 - S13 Seminar – Smooth Migration to Packet Voice

Bob Dye, *Sonus Networks*

Bio: As Vice President, Strategic Product Marketing, at Sonus Networks, Bob Dye is responsible for Sonus' voice infrastructure solutions. Prior to joining Sonus, Mr. Dye held Director-level Product Management positions at Polycom, Compression Labs, and BBN Communications. He holds a BS from the University of Arizona and an MBA from the University of Chicago.

Abstract: IP-based enhanced services such as prepaid, conferencing, call centers and others offer carriers a proven business case and are ready for deployment in today's next-generation networks. In this session, executives will address the following topics, among others:

- How to slowly introduce packet voice technologies, while maintaining the circuit-switched network in parallel.
- How do IP-based enhanced services provide opportunities to develop new revenue streams on a global scale?
- How has the decomposition of the traditional circuit switch radically altered the telecom environment?
- What types of equipment are required to deliver the same level of services in this new model?
- What are the technical, market and regulatory challenges facing players in the next-gen voice market?
- How can carriers leverage a single platform to deliver local and long distance