

WTS 2011/VBTS 2011

Wireless Telecommunications Symposium 2011

*Global Wireless Communications: A View
from the “Big Apple”*

April 13 - 15, 2011



California State Polytechnic University, Pomona

**Holiday Inn Midtown 57th Street
New York City, New York USA**

WELCOME TO WTS 2011/VBTS 2011

Welcome to the tenth annual Wireless Telecommunications Symposium and ninth annual Video and Broadband Telecommunications Symposium. We hope that WTS 2011: Global Wireless Communications: A View from the Big Apple and VBTS 2011: The Future of Television will be a stimulating and rewarding experience for you. Convergence is upon us and the pairing of these two conferences in an interdisciplinary manner is an excellent way to explore it. During the next three days WTS 2011/VBTS 2011 will explore the next generation of global wireless and video communications in depth - in the invited speakers' presentations; the Wireless Multimedia: Technologies, Applications, and Business Opportunities panel discussion; the IPv6, Network Security, and Wireless Technologies & Healthcare tutorials; and the accepted paper program.

The WTS 2011/VBTS 2011 Program Committees received paper submissions from authors representing 31 different countries. We thank all the authors who submitted papers and proposals to WTS 2011/VBTS 2011, the many reviewers who reviewed them, and the co-chairs, track chairs, and session chairs for coordinating the paper and proposal evaluation and selection process. We also thank the WTSI support personnel for their tireless efforts behind the scene. Producing an event like WTS 2011/VBTS 2011 is not an easy task, and they did a masterful job. In addition, the WTSI Committee is grateful to the IEEE Communications Society and its Wireless Technical Committee for their technical support for WTS 2011, and to the distinguished invited speakers representing the telecommunications industry for having taken time to participate in the conference and help us organize the program.

Finally, special thanks go to many organizations that have contributed to the conference or lent it financial support. Notable among the contributors and donors are Cal Poly Pomona's College of Business Administration and College of Engineering; its Computer Information Systems Department; Verizon Communications; the Wagner Foundation; MESAQIN; CBS Television Studios; the New York Institute of Technology; Stevens Institute of Technology; and New Jersey Institute of Technology.

On behalf of the WTS 2011/VBTS 2011 Committees -- Welcome to WTS 2011/VBTS 2011!

Dr. Steven Powell, WTSI General Chair
Dr. Thomas Ketseoglou, WTSI Assistant Chair

WTS 2011/VBTS 2011 Program

Tuesday, April 12	
9:00 am – 5:00 pm	Optional Sightseeing Visit: Statue of Liberty; World Trade Center Site (Ground Zero); Empire State Building; Museum of Modern Art (?)
Wednesday, April 13	
8:15 am – 9:15 am	Registration
9:15 am – 9:30 am	Welcoming Remarks
9:30 am – 10:15am	Tutorial: "IPv6 Transition Strategy in a Mobile Environment" (I) Paul Farag Manager, T-Mobile USA
10:15 am – 10:30 am	Networking Break
10:30 am – 11:15 am	Tutorial: "IPv6 Transition Strategy in a Mobile Environment" (II) Paul Farag Manager, T-Mobile USA
11:15 am – 12:00 pm	Invited Presentation: "The New Media Equation: What Going Mobile Means to the Future of Media and Television" Dr. William F. Baker Educator, Author, and Former Broadcast Television Executive Director, Bernard L. Schwartz Center for Media, Education, and Public Policy, Fordham University
12:00 pm – 2:00 pm	Lunch Invited Presentation: "Evolution of the Internet: Challenges & Opportunities" Guest Speaker: Dr. Robert E. Kahn Internet Pioneer Chairman, CEO, and President of the Corporation for National Research Initiatives (CNRI)

<p>2:00 pm – 3:30 pm</p>	<p>Panel Discussion: "Wireless Multimedia: Technologies, Applications, and Business Opportunities" Organizer and moderator: Dr. Stephen Weinstein, Communication Theory & Technology Consulting Corp. Panelists: Dr. David Goodman, Professor Emeritus, Polytechnic University Stan Moyer, Strategic Research Program Manager, Telcordia Technologies Dr. Adam Drobot, Managing Director, 2M Companies Dr. Peter Magill, Executive Director, Optical Systems Research, AT&T Labs</p>
<p>3:30 pm – 3:45 pm</p>	<p>Networking Break</p>
<p>3:45 pm – 5:45 pm</p>	<p>Tutorial: "Network Security Architecture in Practice" Dr. Francois Cosquer Head of Solutions Security Alcatel-Lucent Corporate Solutions</p>
<p>6:00 pm – 7:30 pm</p>	<p>Reception</p>
<p>7:30 pm – 9:00 pm</p>	<p>Optional Sightseeing Visit: Top of the Rock (Rockefeller Center) Observation Deck</p>
<p>Thursday, April 14</p>	
<p>8:30 am – 9:30 am</p>	<p>Registration</p>
<p>9:30 am – 10:15 am</p>	<p>Executive Session (I) "Beyond the Vast Wasteland" Dr. Stuart D. Elby Vice President – Network Architecture & CTO – Verizon Digital Media Services Verizon Communications</p>
<p>10:15 am – 10:30 am</p>	<p>Networking Break</p>
<p>10:30 am – 11:15 am</p>	<p>Executive Session (II) Håkan Eriksson Group CTO and President, Ericsson Silicon Valley Ericsson</p>

11:15 am – 12:00 pm	Executive Session (III) "Japanese Mobile Multimedia and Cellular Services" Masaaki Maeda President & CEO NTT DOCOMO USA
12:00 pm - 1:15 pm	Lunch
1:15 pm – 2:00 pm	Invited Presentation: "GreenTouch – Global Research Consortium for Sustainable Networking" Dr. Suresh Goyal Leader, Green Touch Project Alcatel-Lucent Bell Laboratories
2:00 pm – 3:30 pm	Tutorial: "Wireless Technologies & Healthcare: Applications, Requirements, and Emerging Research" (I) Professor Upkar Varshney Department of CIS, Georgia State University
3:30 pm – 3:45 pm	Networking Break
3:45 pm – 5:15 pm	Tutorial: "Wireless Technologies & Healthcare: Applications, Requirements, & Emerging Research" (II) Professor Upkar Varshney Department of CIS, Georgia State University
5:30 pm –	CBS Television Studios Tour (30 people)
Friday, April 15	
7:30 am – 8:30 am	Registration
7:30 am – 10:15 am	Accepted Paper Sessions (I)
10:15 am – 10:30 am	Networking Break
10:30 am – 12:15 pm	Accepted Paper Sessions (II)
12:15	Lunch

pm – 1:15 pm	
1:15 pm – 3:00 pm	Accepted Paper Sessions (III)
3:15 pm – 3:30 pm	Networking Break
3:30 pm – 5:15 pm	Accepted Paper Sessions (IV)
5:15 pm – 5:30 pm	Awards Ceremony Closing Remarks
Saturday, April 16	
9:00 am – 5:00 pm	Optional Sightseeing Visit: American Museum of Natural History, Rose Center for Earth and Space, and the Hayden Planetarium; Metropolitan Museum of Art

Panel Discussions & Tutorials

Panel Discussion: “Wireless Multimedia: Technologies, Applications, and Business Opportunities”

Abstract: This panel explores different facets of the growing availability of multimedia content and services on 3G-4G devices such as smart phones and tablets. The issues may include technical innovations, obstacles and solutions; venture capital and business development opportunities; government policy; pricing strategies; wireless content delivery networks; resources contention; and societal impacts.

Organizer and moderator: Stephen Weinstein, Communication Theory & Technology Consulting Corp.

Panelists:

- David Goodman, Professor Emeritus, Polytechnic University
- Stan Moyer, Strategic Research Program Manager, Telcordia Technologies
- Adam Drobot, Managing Director, 2M Companies
- Peter Magill, Executive Director, Optical Systems Research, AT&T Labs

Tutorial: "IPv6 Transition Strategy in a Mobile Environment"

Presenter: Paul Farag, Manager, T-Mobile USA

Overview

What is IPv6?

Why IPv6 and availability of IPv4.

Why is it the right time to move to IPv6

Why NAT does not scale

Introduction to what a mobile packet core looks like

Transition Strategy:

Tunneling (IP46 tunnels)

CGN

Dual Stack

Pro's and Con's

NAT64

Expected take rate

Challenges

Handset issues

DPI

Tutorial: Network Security Architecture in Practice

Presenter: Dr. François Cosquer – Head of Solutions Security, Alcatel-Lucent Corporate Solutions and Marketing

Abstract

After an introduction to security architecture followed by a review of deployment models and scenarios, the tutorial illustrates how security design principles can be applied in practice. Based on concrete examples of services such as Corporate VoIP and Carrier IPTV, we will discuss how - using known building blocks and design principles - to build secure architectures. The main objective of this session is to get a solid basis for the design and deployment of secure architecture.

List of topics

Network Security Architecture Key Principles and standards

- Definitions: Network security architecture and management
- Risk and threats
- Standards
- Security triade (opportunity, motive, capability)
- Security lifecycle (prevention, detection, reaction)

Security toolkit

- Device, service, content&media protection
- IDS / IPS
- Signature, behaviour
- Secure Logging (post mortem)
- Aggregation , normalization, correlation

Case study

- Corporate Voice over IP deployment
- Carrier Residential IPTV deployment

Tutorial: "Wireless Technologies and Healthcare: Applications, Requirements, and Emerging Research"

Presenter: Professor Upkar Varshney, Department of CIS, Georgia State University

Abstract

The introduction of telecommunications in healthcare has led to an increased accessibility to healthcare providers, more efficient tasks and processes, and a higher quality of healthcare services. However, many challenges, including a significant number of medical errors, considerable stress on healthcare providers, and a partial coverage of healthcare services in rural and underserved areas worldwide, still exist. These combined with an increasing cost of healthcare services, such as the cost of healthcare services reaching to 19% of Gross National Product for U.S., and an exponential increase in the number of seniors and retirees in developed countries have created several major challenges for policy makers, healthcare providers, hospitals, insurance companies and patients. Wireless healthcare, or pervasive healthcare, is considered a solution to many of these problems as well as a possible future of healthcare services. In simple terms, wireless healthcare can be defined as healthcare to anyone, anytime, and anywhere by removing locational, time and other restraints while increasing both the coverage and quality of healthcare. The broad definition includes prevention, healthcare maintenance and checkups, short-term monitoring (or home healthcare monitoring), long-term monitoring (nursing home), personalized healthcare monitoring, incidence detection and management, and, emergency intervention, transportation and treatment. In this tutorial, we present an introduction of wireless and mobile technologies, present wireless healthcare applications, derive requirements and wireless solutions, and discuss the future and open issues. More specifically, we discuss how wireless technologies can be applied to achieve wide-scale patient monitoring in and out of hospitals and nursing homes, location management, intelligent emergency system, and mobile telemedicine applications. Additionally, some open issues and research challenges in pervasive healthcare are also discussed.

List of topics

Current wireless technologies: Architecture, Protocols and Usage Models

- Sensors and RFID
- Wireless LANs
- Ad hoc wireless networks
- 3G/4G Cellular Networks
- Satellites
- Fixed wireless
- Bluetooth and PANs
- Smart and wearable computing

Various Healthcare Challenges and Current Technologies

- Access
- Quality
- Limited resources
- Medical errors

Applications, Requirements and Wireless Solutions

- Pervasive healthcare
- Mobile Telemedicine
- Wireless Health Monitoring
- Wireless Emergency Management Systems
- Health-aware Mobile Devices
- Smart Medication Management
- Smart Homes
- Context-awareness in healthcare
- Wireless decision making & cognitive load

Future/Open issues of Wireless in Healthcare

- Personalization of Healthcare
- Wireless in emergencies
- Wireless in mental health, addiction and overdose management
- Training of healthcare professionals for wireless technologies
- Reducing the cost of delivering healthcare services by wireless infrastructure
- Legal and regulatory issues including liability and law-suits

WTS 2011 Accepted Paper Sessions
Friday, April 15, 2011

April 15, 2011	
7:30 am – 8:30 am	Registration
Session I-A: Physical Layer I-A	
Session Chair: TBD	
7:35 – 7:55	<i>An Efficient Correction of Carrier Frequency Offset and Sample Timing Offset by Feedback Method</i> HuiKyu Lee (Chungbuk National University, Korea); Heung-Gyoon Ryu (Chungbuk National University, Korea)
7:55 – 8:15	<i>A Tracking Based BEM Algorithm for OFDMA Channel Estimation</i> Mohammad Fazle Rabbi (National University of Singapore, Singapore)
8:15 – 8:35	<i>Femtocell Power Control by Discrimination of Indoor and Outdoor Users</i> Kyong-Tak Cho (ETRI, Korea); Junsik Kim (ETRI, Korea); Gwangil Jeon (Korea Polytech University, Korea); Ryu Byung Han (ETRI, Korea); Nam-Hoon Park (ETRI, Korea)
8:35 – 8:55	<i>Time Varying Convolutional Codes for Punctured Turbocodes</i> Yannick Saouter (Ecole Nationale Supérieure des Telecommunications de Brest, France); Claude Berrou (Ecole Nationale Supérieure des Telecommunications de Brest, France)
Session I-B: Physical Layer I-B	

Session Chair: TBD	
8:55 – 9:15	<i>Fountain Codes with Message Passing and Maximum Likelihood Decoding over Erasure Channels</i> Weizheng Huang (Ohio University, USA); Huanlin Li (Ohio University, USA); Jeffrey Dill (Ohio University, USA)
9:15 – 9:35	<i>A Monolithic LTE Interleaver Generator for highly parallel SMAP Decoders</i> Thomas Ilmseher (University of Kaiserslautern, Germany); Matthias May (University of Kaiserslautern, Germany); Norbert Wehn (University of Kaiserslautern, Germany)
9:35 – 9:55	<i>Experimental Optical Code-Division Multiple Access System for Visible Light Communications</i> Marcos F. Guerra-Medina (University of La Laguna, Spain); Borja Rojas-Guillama (University of La Laguna, Spain); Oswaldo González (University of La Laguna, Spain); Jesus A Martin-Gonzalez (Universidad de Burgos, Spain); Enrique Poves (Universidad Politecnica de Madrid, Spain); Francisco J Lopez-Hernandez (Universidad Politecnica de Madrid, Spain)
9:55 – 10:15	<i>A Software-Defined Radio Based on the Unified SMSE Framework</i> Robert Graessle (MathWorks, USA); Chi-Hao Cheng (Miami University, USA)
10:15am – 10:30am	Networking Break
Session II: Physical Layer II	
Session Chair: TBD	
10:30 – 10:50	<i>First Results of a Leaky Coaxial Cable Prototype for Indoor Positioning</i> Julia Engelbrecht (HTW Dresden, Germany); Ralf Collmann (HTW Dresden, Germany); Ulrich Birkel (FH Giessen - Friedberg, Germany); Mark Weber (FH Giessen-Friedberg, Germany)
10:50 – 11:10	<i>Validation of ITU-T P.863 for Low Bit-rate Coded Speech Quality Measurements</i> Jan Holub (FEE CTU Prague, Czech Republic)
11:10 – 11:30	<i>Experimental Study on Protection Distances between LTE and DVB-T stations operating in adjacent UHF Frequency Bands</i> Andrea Aloisi (Fondazione Ugo Bordononi, Italy); Massimo Celidonio (Fondazione Ugo Bordononi, Italy); Lorenzo Pulcini (Fondazione Ugo Bordononi, Italy); Arianna Rufini (Fondazione Ugo Bordononi, Italy)
11:30 – 11:50	<i>Power Allocation Strategies for SVD Multicell MIMO-OFDM Based Systems</i> Reza Holakouei (Instituto de Telecomunicações - Universidade de Aveiro, Portugal); Adão Silva (Instituto de Telecomunicações (IT)/University of Aveiro, Portugal); Atilio Gameiro (Instituto de Telecomunicações / Universidade de Aveiro, Portugal)

11:50 – 12:10	<i>Channel Estimation and Detection for Block Transmission Systems</i> Khaled Amleh (Penn State Mont Alto, USA); Hongbin Li (Stevens Tech, USA)
12:10 pm – 1:10 pm	Lunch
Session III: Physical Layer III	
Session Chair: TBD	
1:10 – 1:30	<i>Optimizing the Combination of MBSFN and PTM Transmissions in LTE Systems</i> Antonios Alexiou (University of Patras, Greece); Christos Bouras (University of Patras and RACTI, Greece); Vasileios Kokkinos (RACTI and University of Patras, Greece); Andreas Papazois (RACTI and University of Patras, Greece); Georgia Tseliou (RACTI and University of Patras, Greece)
1:30 – 1:50	<i>Optimized Iterative (Turbo) Reception for QAM OFDM with CFO over Unknown Double-Selective Channels</i> Thomas Ketseoglou (California State Polytechnic University, USA); Henk Wymeersch (Chalmers University of Technology, Sweden)
1:50 – 2:10	<i>On the Performance of Linear and Nonlinear Companding Transforms in OFDM Systems</i> Yasir Rahmatallah (University of Arkansas at Little Rock, USA); Nidhal Bouaynaya (University of Arkansas at Little Rock, USA); Seshadri Mohan (University of Arkansas at Little Rock, USA)
2:10 – 2:30	<i>Wireless Channel Characterization for a Home Indoor Propagation Topology at 2.4 GHz</i> Theofilos Chrysikos (University of Patras, Greece); Giannis Georgopoulos (University of Patras, Greece); Stavros Kotsopoulos (Wireless Telecommunications Laboratory, Greece)
2:30 – 2:50	<i>Transmitter Preprocessing Assisted Multicell MIMO Downlink Communication over Correlated Frequency-Selective Wireless Communication Channels</i> Prabaagarane N (SSN Institutions, India); Sabarish Karthik Vivek Sarathy (Rutgers University, USA); Prasaanth Muralidharan (Georgia Institute of Technology, USA); Yuvika Ashwina Rajan (Georgia Institute of Technology, USA)
2:50 – 3:10	<i>Average Efficiency of Power Amplifiers in Power-Controlled Systems with Multi-Antenna Diversity</i> Olli Apilo (VTT, Finland); Mika Lasanen (VTT Technical Research Centre of Finland, Finland); Aarne O Mammela (VTT, Finland); Friedrich K. Jondral (Karlsruhe Institute of Technology, Germany)
3:10 pm – 3:25 pm	Networking Break
Session IV: Physical Layer IV	
Session Chair: TBD	
3:25 – 3:45	<i>A New Energy Efficient Interface Selection Mechanism</i>

	<i>for Power Saving at Multi-Interface Mobile Terminals</i> Ines Slama (telecom Sudparis, France)
3:45 – 4:05	<i>New Multiuser MIMO Downlink Scenario Based on Block Diagonalization Transmission</i> Hazhir Shokri Razaghi (Royal Institute of Technology (KTH), Sweden); Kamal Mohamed-pour (K.N.Toosi University of Technology, Iran); Seyed Mehdi Hosseini Andargoli (K.N.Toosi University of Technology, Iran); Masoud Hoseinzade (K.N.Toosi University of Technology, Iran)
4:05 – 4:25	<i>Generic Approach for Hierarchical Modulation Performance Analysis: Application to DVB-SH</i> Hugo Meric (University of Toulouse, France); Jerome Lacan (University of Toulouse, France); Caroline Amiot-Bazile (CNES, France); Fabrice Arnal (Thales Alenia Space, France); Marie-Laure Boucheret (Enseeiht, France)
4:25 – 4:45	<i>Decision Directed Recursive Least Square Adaptive Channel Estimation for OFDMA Uplink System</i> Sung Sue Hwang (Pusan National University, Korea); SangSeok Yun (Pusan National University, Korea); Suk Chan Kim (Pusan National University, Korea)
4:45 – 5:05	<i>An MGF Approach for Performance Evaluation of Non-Regenerative Cooperative Relaying with Adaptive M-QAM Modulation and Optimum Power Allocation Strategy in Nakagami-m Fading Environment</i> Bhuvan C Modi (Prairie View A & M University, USA); Annamalai Annamalai (Prairie View A&M University, USA); Ramesh Chembil Palat (Consultant, USA)
5:15 pm – 5:30 pm	Awards Ceremony & Closing Remarks

April 15, 2011	
7:30 am – 8:30 am	Registration
Session V-A: Physical Layer V-A	
Session Chair: TBD	
7:35 - 7:55	<i>Improving TurboCode Performance By Cross-Entropy</i> Yannick Saouter (Ecole Nationale Superieure des Telecommunications de Brest, France)
7:55 – 8:15	<i>On the modified Teager-Kaiser Energy Operator regarding Narrowband Interference</i> Hanns-Ulrich Dehner (Karlsruhe Institute of Technology, Germany); Holger Jaekel (Karlsruhe Institute of Technology (KIT), Germany); Friedrich K. Jondral (Karlsruhe Institute of Technology, Germany)
8:15 – 8:35	<i>BER Analysis of OFDM Signals on Frequency-Selective Rician Fading Channels</i> Zhiwei Mao (Fairleigh Dickinson University, USA); Julian Cheng (University of British Columbia, Canada)
8:35 – 8:55	<i>On the Optimal Subcarrier Mapping Scheme in OFDM Decode-and-Forward Relay Systems</i>

	Enis Kocan (University of Montenegro, Montenegro); Milica Pejanovic-Djurisic (University of Montenegro, Montenegro); Zoran Veljovic (University of Montenegro, Montenegro)
Session V-B: Physical Layer V-B	
Session Chair: TBD	
8:55 – 9:15	<i>Optimum Selective Mapping for PAPR Reduction</i> Yanyan Wu (Xi'an Jiaotong-Liverpool University, P.R. China); Ka-Lok Man (Xi'an Jiaotong-Liverpool University, P.R. China); Yufeng Wang (USF, USA)
9:15 – 9:35	<i>Space-Time Block Coding with Symbol-Wise Decoding for Polynomial Phase Modulated Signals</i> Omar Granados (Florida International University, USA); Jean Andrian (Florida International University, USA)
9:35 – 9:55	<i>Quantitative Analysis of Propagation Characteristics for Mobile WiMAX</i> Pradhuma L Shrestha (University of Nebraska-Lincoln, USA); Puttipong Mahasukhon (University of Nebraska- Lincoln, USA); Michael Hempel (University of Nebraska- Lincoln, USA); Tao Ma (University of Nebraska-Lincoln, USA); Hamid Sharif (University of Nebraska-Lincoln, USA)
9:55 – 10:15	<i>OSSIE/GNU Radio Generic Component</i> Duyun Chen (University of Pennsylvania, USA); Garrett Vanhoy (University of Arizona, USA); Marypat Beaufait (University of Michigan, USA); Carl B. Dietrich (Virginia Tech, USA)
10:15 am – 10:30 am	Networking Break
Session VI: MAC Layer I	
Session Chair: TBD	
10:30 – 10:50	<i>ExBCG-TC: Extended Borel Cayley Graph Topology Control for Ad-hoc Sensor Networks</i> Dongsoo Kim (Stony Brook University, USA); Jaewook Yu (Stony Brook University, USA); Eric Noel (AT&T Labs - Research, USA); Wendy Tang (Stony Brook University, USA)
10:50 – 11:10	<i>Cross Layer Design for Multimedia Streaming over Wireless 802.11e Networks</i> Hong (Hannah) Zhao (Fairleigh Dickinson University, USA); Nirwan Ansari (NJIT, USA)
11:10 – 11:30	<i>Throughput Optimization in Wireless Multihop Networks with Successive Interference Cancellation</i> Patrick Mitran (University of Waterloo, Canada); Catherine Rosenberg (University of Waterloo, Canada); Samat Shabdanov (University of Waterloo, Canada)
11:30 – 11:50	<i>A New Medium Access Protocol for RFID Networks with Foresight</i> Fariha Baloch (Wichita State University, USA); Hoang Dang (Wichita State University, USA); Edwin Sawan (Wichita State University, USA); Ravi Pendse (Wichita State University, USA)
11:50 – 12:10	<i>A Reliable, Energy Efficient Memory Repository built</i>

	<p><i>from an Unreliable Distributed Sensor Network</i> Paul Gaynor (The University of the West Indies, Jamaica); Daniel N Coore (The University of the West Indies, Jamaica)</p>
12:10 pm – 1:10 pm	Lunch
Session VII: MAC Layer II	
Session Chair: TBD	
1:10 – 1:30	<p><i>A Distributed Collision-Free Time Slot and Channel Assignment Algorithm for OFDM/TDMA Wireless Relay Networks</i> Vida Ferdowsi (University of Missouri Kansas City, USA); Kenneth Mitchell (University of Missouri-Kansas City, USA)</p>
1:30 – 1:50	<p><i>Fountain Code based AL-FEC for Multicast Services in MANETs</i> Elena Mammi (University of Roma TRE, Italy); Veronica Palma (University of ROMA TRE, Italy); Alessandro Neri (University of ROMA TRE, Italy); Marco Carli (University of Roma TRE, Italy)</p>
1:50 – 2:10	<p><i>Node ID Assignment in Group Theoretic Graphs for WSNs</i> Junghun Ryu (Stony Brook University, USA); Jaewook Yu (Stony Brook University, USA); Eric Noel (AT&T Labs - Research, USA); Wendy Tang (Stony Brook University, USA)</p>
2:10 – 2:30	<p><i>Optimized Dual Low Power Listening for Extending Network's Lifetime in Multi-Hops Wireless Sensor Networks</i> Andrea Abrardo (University of Siena, Italy); Lapo Balucanti (University of Siena, Italy); Alessandro Mecocci (University of Siena, Italy)</p>
2:30 – 2:50	<p><i>Noncooperative Distributed MMSE Relay Schemes under Jamming Environment and Node Geometry in Wireless Relay Networks</i> Kanghee Lee (Wichita State University, USA); Hyuck Kwon (Wichita State University, USA); Yanwu Ding (Wichita state university, USA); Yazan Ibdah (Wichita State University, USA); Zuojun Wang (Wichita State University, USA)</p>
2:50 – 3:10	<p><i>A Novel High Throughput Long Training Field Sequence Design for Next-Generation WLAN</i> Wenxuan Zhang (Beijing University of Posts and Telecommunications, P.R. China); Jing Wang (Beijing University of Posts and Telecommunications, P.R. China); Guixia Kang (Beijing University of Posts and Telecommunications, P.R. China)</p>
3:10 pm – 3:25 pm	Networking Break
Session VIII: MAC Layer III	
Session Chair: TBD	

3:25 – 3:45	<i>Performance Analysis of Opportunistic Spectrum Access in Heterogeneous Wireless Networks</i> Qingyan Xie (University of Cincinnati, USA); Qing-An Zeng (North Carolina A&T State University, USA)
3:45 – 4:05	<i>Adaptive Rateless Coding for Constant Bit Rate Data-Partitioned Wireless IPTV</i> Laith A Al-Jobouri (University of Essex, United Kingdom); Martin Fleury (University of Essex, United Kingdom); Mohammad Ghanbari (University of Essex, United Kingdom)
4:05 – 4:25	<i>Combined Source-Channel Transform for Image Transmission Over Wireless Channel</i> Mike Sabelkin (Ecole de technologie superieure, Canada); Francois Gagnon (Ecole de Technologie Superieure, Canada)
4:25 – 4:45	<i>System policies for gradual tuning of security and workload in Wireless Sensor Networks</i> Antonio V. Taddeo (University of Lugano, Switzerland); Luis Germán García Morales (University of Lugano, France); Alberto Ferrante (University of Lugano, Switzerland)
4:45 – 5:05	<i>A Two-dimensional Medium Access Control Protocol based on OFDMA and CSMA/CA</i> Jing Wang (Beijing University of Posts and Telecommunications, P.R. China); Guixia Kang (Beijing University of Posts and Telecommunications, P.R. China); Ping Zhang (WTI-BUPT, P.R. China)
5:15 pm – 5:30 pm	Awards Ceremony & Closing Remarks

April 15, 2011	
7:30 am – 8:30 am	Registration
Session IX-A: Network Layer I-A	
Session Chair: TBD	
7:35 - 7:55	<i>An integrated access network infrastructure combining femtocells to existing cabled networks</i> Dario Di Zenobio (Fondazione Ugo Bordononi, Italy); Massimo Celidonio (Fondazione Ugo Bordononi, Italy); Lorenzo Pulcini (Fondazione Ugo Bordononi, Italy); Arianna Rufini (Fondazione Ugo Bordononi, Italy)
7:55 – 8:15	<i>Algorithms to Accelerate Rare Event Simulation with Markov Chain Modeling in Wireless Telecommunications Networks</i> Izabella V Lokshina (SUNY Oneonta, USA)
8:15 – 8:35	<i>Effect of the number of clusters on the performance of Cooperative Network Coding</i> Gabriel E. Arrobo (University of South Florida, USA); Richard D. Gitlin (USF, USA)
8:35 – 8:55	<i>Using RFID for Anti-theft in a Chinese Electrical Supply Company: A Cost-Benefit Analysis</i> Benjamin Khoo (New York Institute of Technology, USA); Ye Cheng (New York Institute of Technology, USA)
Session IX-B: Network Layer I-B	
Session Chair: TBD	
8:55 – 9:15	<i>Stable Move Algorithm (SMA) for BW Allocation in Wireless Mobile WiMAX Networks 802.16e</i> Ihsan M Shahwan (CCNY, USA)
9:15 – 9:35	<i>A Secure Scheme during Vertical Handoff in Integrated Heterogeneous Wireless Systems</i> Nidhi Rastogi (University of Cincinnati, USA); Qing-An Zeng (North Carolina A&T State University, USA); Xiaolong Li (Indiana State University, USA)
9:35 – 9:55	<i>A "Virtual SONET" Routing Architecture for Ad Hoc Networks in Environmental Monitoring and Emergency Management</i> Michael Bartolacci (Penn State – Berks, USA); Elizabeth Avery-Gomez (New Jersey Institute of Technology, USA)
9:55 – 10:15	<i>Multi-service Load Balancing in a Heterogeneous Network</i> Jie Xu (Norwegian University of Science and Technology, Norway); Yuming Jiang (Norwegian University of Science and Technology (NTNU), Norway); Andrew Perkis (NTNU, Norway)
10:15 am – 10:30 am	Networking Break
Session X: Applications and Business	

Session Chair: TBD

10:30 – 10:50	<i>Telco 2015 - What future in store for mobile communications?</i> Rob van den Dam (IBM, The Netherlands)
10:50 – 11:10	<i>From Wireless to Integrated Telecommunications in Latin America: a Market-Based Analysis of America Movil</i> Steven R Powell (California State Polytechnic University, Pomona, USA)
11:10 – 11:30	<i>A Prediction Model of Merger and Acquisition Cases in US Telecommunication Industry- A Case Study of a Recent Merger in Wireless Communications Sector</i> Ye Ouyang (Stevens Institute of Technology, USA); M. Hosein Fallah (Stevens Institute of Technology, USA)
11:30 – 11:50	<i>Wireless Medication Management System: Design and Performance Evaluation</i> Upkar Varshney (Georgia State University, USA)
11:50 – 12:10	<i>Twitter Data Search</i> Clayton Whitelaw (University of South Florida, USA); Manish Agrawal (University of South Florida, USA); Onook Oh (University at Buffalo, USA); Raghav Rao (SUNY, Buffalo, NY, USA)
12:10 pm – 1:10 pm	Lunch

Session XI: Network Layer II

Session Chair: TBD

1:10 – 1:30	<i>Intelligent mechanisms for key generation from multipath wireless channels</i> Youssef El Hajj Shehadeh (University of Goettingen, Germany); Omar Alfandi (University of Goettingen, Germany); Kifah Tout (Lebanese University, Lebanon); Dieter Hogrefe (University of Goettingen, Germany)
1:30 – 1:50	<i>Notification based S-CSCF load Balancing in IMS Network</i> Isam Abdalla (University of Texas at Dallas, USA); Subbarayan Venkatesan (University of Texas at Dallas, USA)
1:50 – 2:10	<i>Performance of Orthogonal Sub Channel with Dynamic Frequency and Channel Allocation</i> Jyrki Penttinen (Nokia Siemens Networks, Spain); Francesco D. Calabrese (Aalborg University, Denmark); Sebastian Lasek (Nokia Siemens Networks, Poland); Dariusz Tomeczko (Nokia Siemens Networks, Poland); David Valerdi (Vodafone Technology Networks, Spain); Iñigo Güemes (Vodafone, Spain)
2:10 – 2:30	<i>Uplink System Capacity of a Cellular network with Cooperative mobile relay</i> Kiran Vanganuru (Interdigital, USA); Matthew Puzio (InterDigital Communications LLC, USA); Gregory Sternberg (InterDigital Communications Corp., USA); Kandarp Shah (InterDigital Communications LLC, USA); Samian Kaur (Interdigital, USA)
2:30 – 2:50	<i>Routing Approaches and Performance Evaluation in</i>

	<i>Delay Tolerant Networks</i> Annalisa Socievole (University of Calabria, Italy); Florian De Rango (University of Calabria, Italy); Carmine Coscarella (University of Calabria, Italy)
2:50 – 3:10	<i>A Novel Scalable Software Platform on Android for efficient QoS on Android Mobile Terminals based on Multiple Radio Access</i> Suman Kumar Sanjeev Prasanna (Aricent Technologies Limited (formerly Flextronics Software Systems Limited), India); S Vijay Anand (ARICENT, Director - Technology, India)
3:10 pm – 3:25pm	Networking Break
Session XII: Network Layer III	
Session Chair: TBD	
3:25 – 3:45	<i>Cramer-von Mises Test based Spectrum Sensing for Cognitive Radio Systems</i> Thuc Kieu-Xuan (University of Ulsan, Korea)
3:45 – 4:05	<i>Ad Hoc M2M Communications and security based on 4G cellular system</i> Mahdy Saedy (University of Texas at San Antonio, USA); Vahideh Mojtahed (Purdue University, USA)
4:05 – 4:25	<i>Fusing Multi-Layer Metrics for Detecting Security Attacks in 802.11 Networks</i> Konstantinos G Kyriakopoulos (Loughborough University, United Kingdom); Francisco Javier Aparicio Navarro (Loughborough University, United Kingdom); David Parish (Loughborough University, United Kingdom)
4:25 – 4:45	<i>MacroFemto Cell Handover with enhanced QoS in Mobile WiMAX</i> Rami Ellouze (University of versailles, France); Mourad Gueroui (PRISM, University of Versailles, France); Adel Alimi (REGIM: REsearch Group on Intelligent Machines, Tunisia)
4:45 – 5:05	<i>Efficient Resource Allocation for MIMO-OFDMA based Cognitive Radio Networks</i> Hamid Shahrokh (K.N.Toosi University of Technology- Tehran, Iran); Kamal Mohamed-pour (K.N.Toosi University of Technology, Iran); Lorenzo Vangelista (University of Padova, Italy)
5:15 pm – 5:30 pm	Awards Ceremony & Closing Remarks

Speaker Biographies

Dr. Robert E. Kahn is Chairman, CEO, and President of the Corporation for National Research Initiatives (CNRI), which he founded in 1986 after a thirteen year term at the U.S. Defense Advanced Research Projects Agency (DARPA). CNRI was created as a not-for-profit organization to provide leadership and funding for research and development of the National Information Infrastructure.

After receiving a B.E.E. from the City College of New York in 1960, Dr. Kahn earned M.A. and Ph.D. degrees from Princeton University in 1962 and 1964 respectively. He worked on the Technical Staff at Bell Laboratories and then became an Assistant Professor of Electrical Engineering at MIT. He took a leave of absence from MIT to join Bolt Beranek and Newman, where he was responsible for the system design of the Arpanet, the first packet-switched network. In 1972 he moved to DARPA and subsequently became Director of DARPA's Information Processing Techniques Office (IPTO). While Director of IPTO he initiated the United States government's billion dollar Strategic Computing Program, the largest computer research and development program ever undertaken by the federal government. Dr. Kahn conceived the idea of open-architecture networking. He is a co-inventor of the TCP/IP protocols and was responsible for originating DARPA's Internet Program. Until recently, CNRI provided the Secretariat for the Internet Engineering Task Force (IETF). Dr. Kahn also coined the term National Information Infrastructure (NII) in the mid 1980s which later became more widely known as the Information Super Highway.

In his recent work, Dr. Kahn has been developing the concept of a digital object architecture as a key middleware component of the NII. This notion is providing a framework for interoperability of heterogeneous information systems and is being used in many applications such as the Digital Object Identifier (DOI). He is a co-inventor of Knowbot programs, mobile software agents in the network environment.

Dr. Kahn is a member of the National Academy of Engineering, a Fellow of the IEEE, a Fellow of AAAI, a Fellow of ACM and a Fellow of the Computer History Museum. He is a member of the State Department's Advisory Committee on International Communications and Information Policy, a former member of the President's Information Technology Advisory Committee, a former member of the Board of Regents of the National Library of Medicine and the President's Advisory Council on the National Information Infrastructure.

He is a recipient of the AFIPS Harry Goode Memorial Award, the Marconi Award, the ACM SIGCOMM Award, the President's Award from ACM, the IEEE Koji Kobayashi Computer and Communications Award, the IEEE Alexander Graham Bell Medal, the IEEE Third Millennium Medal, the ACM Software Systems Award, the Computerworld/Smithsonian Award, the ASIS Special Award and the Public Service Award from the Computing Research Board. He has twice received the Secretary of Defense Civilian Service Award. He is a recipient of the 1997 National Medal of

Technology, the 2001 Charles Stark Draper Prize from the National Academy of Engineering, the 2002 Prince of Asturias Award, and the 2004 A. M. Turing Award from the Association for Computing Machinery. Dr. Kahn received the 2003 Digital ID World award for the Digital Object Architecture as a significant contribution (technology, policy or social) to the digital identity industry. In 2005, he was awarded the Townsend Harris Medal from the Alumni Association of the City College of New York, the Presidential Medal of Freedom, and the C & C Prize in Tokyo, Japan. He was inducted into the National Inventors Hall of Fame in May 2006, and awarded the Japan Prize for his work in "Information Communication Theory and Technology" in 2008.

Dr. Kahn has received honorary degrees from Princeton University, University of Pavia, ETH Zurich, University of Maryland, George Mason University, the University of Central Florida and the University of Pisa, and an honorary fellowship from University College, London.

Dr. William F. Baker directs the Bernard L. Schwartz Center for Media, Education, and Public Policy at Fordham University, where he is also Journalist-in-Residence and a professor in the Graduate School of Education. He is a professor at IESE Business School, ranked #1 globally by *The Economist*. Baker is a Senior Research Fellow at Harvard's Hauser Center for Nonprofit Organizations, Executive-in-Residence at the Columbia University Business School, teaches at the Juilliard School, and is President Emeritus of Educational Broadcasting Corporation (EBC), licensee of America's flagship PBS station Thirteen/WNET, and WLIW21, New Jersey's PBS affiliate.

Baker is co-author of the book *Leading with Kindness: How Good People Consistently Get Superior Results* (American Management Association, 2008), and hosts the documentary of the same name which premiered on public television in 2008.

Baker's career spans four decades. During his twenty years as chief executive officer of EBC, he distinguished himself as one of America's most prolific fundraisers, raising over \$1 billion for the station, and establishing the largest endowment in the history of public television. Among many other accomplishments at EBC, Baker introduced the landmark program *Charlie Rose*, oversaw the station's transition to digital broadcasting, and launched WNET's first cable channel, MetroArts/Thirteen.

Prior to joining EBC, he was president of Westinghouse Television and chairman of their cable and programming companies. At Westinghouse, Baker introduced Oprah Winfrey as a talk show host and established *PM Magazine* as the #1 syndicated program in America in the 1980s. During Baker's tenure, Westinghouse also launched five cable networks, including the Discovery Channel and the Disney Channel.

Baker is the executive producer of the *The Face: Jesus in Art*, a landmark Emmy-winning documentary film that traces the image of Jesus Christ in art around the world and across two millennia. *The Face* premiered nationwide on public television in 2001 and also enjoyed a limited theatrical release.

Baker is the recipient of seven Emmy Awards and is a fellow of the

American Academy of Arts and Sciences. In 2007, he was inducted into the National Academy of Television Arts & Sciences (NATAS) Management Hall of Fame and received the *Mark Schubart Award* from the Lincoln Center Institute, given to individuals who most exemplify the Institute's ideal of integrating the arts with education. He has been inducted into *Broadcasting & Cable's* Hall of Fame and the New York State Broadcasters Association Hall of Fame. In addition to numerous other awards, Baker has received the Gabriel Personal Achievement Award, two Alfred I. duPont-Columbia University Journalism Awards and the 1987 Trustees Emmy Award, given in recognition of outstanding contribution to the advancement of television.

Baker is also the co-author of *Down the Tube: An Insider's Account of the Failure of American Television* (Basic Books, 1998) and the author of *Lighthouse Island: Our Family Escape* (Ruder Finn Press, 2004).

In addition to being Chairman of the National Parks System Advisory Board, Baker serves on the boards of Rodale Press and the Intrepid Sea, Air & Space Museum in New York City. He holds B.A., M.A. and Ph.D. degrees from Case Western Reserve University, and seven honorary doctorates.

Dr. Baker's long standing commitment to promoting education led him to establish WNET's Educational Resources Center, America's most prolific trainer in multimedia teaching techniques. He also established the Bernard L. Schwartz Center for Media, Education, & Public Policy at Fordham University, and he is an annual speaker at WNET's Celebration of Teaching and Learning.

His interests include astronomy, horology, and polar science, and he is believed to be one of only a few people who have stood on both the North and South Poles.

Håkan Eriksson is Group Chief Technology Officer and President of Silicon Valley at Telefonaktiebolaget LM Ericsson.

Mr. Eriksson was appointed Vice President and General Manager for Research and Development at Ericsson on April 14, 2003, and was responsible for development activities carried out in Ericsson's Core Network Development, Radio Network Development and Service Network and Applications, as well as for Ericsson Research. Prior to this, Mr. Eriksson served for five years as head of Ericsson Research.

Mr. Eriksson joined Ericsson in 1986, representing the company as a technical expert in GSM standardization work and he has held a number of senior positions in the Research and Development field for Ericsson in Sweden and internationally.

Håkan Eriksson was born in Mjölby, Sweden, in 1961. He graduated with a Master of Science degree in Electrical Engineering, and in 2005 was awarded an Honorary Ph D, both from Linköping Institute of Technology, Sweden, in 1985.

Masaaki Maeda is currently the President & CEO of NTT DOCOMO USA, a wholly owned subsidiary of NTT DOCOMO Inc, Japan's leading mobile telecommunications company. He concurrently holds the title of Associate

Senior Vice President in NTT DOCOMO overseeing new business development in the Americas.

Mr. Maeda began his career in the Japanese telecommunications industry at the Technical Development Department of NTT (Nippon Telegraph and Telephone Corporation). In March 1994, he moved to NTT DOCOMO, the mobile arm of NTT which was spun off from its parent company in 1992. In October of 2004, Mr. Maeda launched NTT DOCOMO USA's "namikiteru®" service, a public wireless LAN access service catering to the needs of Japanese corporate clients in North America later followed by "namimail®" service in 2005, a software application which allows users to read and write Japanese on BlackBerry® handheld devices.

In September of 2009, Mr. Maeda opened the first NTT DOCOMO customer-service counter in the continental US aimed at providing a seamless user experience to customers travelling in North America. Currently, Mr. Maeda is spearheading the company's development of US-Japan partnerships to promote a new generation of wireless products and services which includes smartphones, electronic readers, and Android™ applications.

Mr. Maeda holds a bachelor and a master's degree in electrical engineering from the Tokyo Institute of Technology. In addition, he received an MBA from MIT's Sloan School of Management in June 2002.

Dr. Stuart Elby, Chief Technologist of Verizon Digital Media Services, is responsible for the overall solutions architecture, design and development of VDMS' platform-as-a-service products and the cloud computing infrastructure upon which they are delivered. As VP within the Technology organization, Stuart is responsible for developing Verizon's target network architecture and driving the industry to converge towards this target. He also manages the design and specification of Verizon's metro and long haul optical transport networks, the migration of voice platforms to VoIP and IMS, and the development of Verizon's service delivery platform supporting Verizon Wireless' open network initiatives. Stuart oversees the Verizon Interoperability Forum and manages R&D relationships with several leading Universities and government agencies.

Previously, Dr. Elby was a Research Associate at the NSF Center for Telecommunications Research at Columbia University performing R&D in all-optical networks and developing ATM/WDM platforms. At a laser surgery start-up, Lasers for Medicine Inc, he was responsible for FDA clinical trails, product development, and brought the first disposal plastic fiber-optic system to the medical market. In 1982, he worked at StorageTek, contributing to the development of the first commercial optical disk system.

Stuart received a BS degree in Optical Engineering from the University of Rochester, NY, in 1982 and received a MSEE and Ph.D. from Columbia University in 1989 and 1994, respectively. He lives with his wife and kids just south of the middle of nowhere, NJ.

Dr. Suresh Goyal leads the Green Research theme at Bell Labs involving cross-domain research on sustainable networks and energy-efficiency enablement. Bell Labs' green research involves more than fifty researcher

and a large number of external collaborators. A center point of Bell Labs' green research is GreenTouch®. GreenTouch® is a global research consortium, formed under the leadership of Bell Labs, with the goal of inventing sustainable, ultra-energy-efficient, ICT networks. Suresh led the Bell Labs research teams that performed the analyses leading to the announcement of GreenTouch®.

Dr. François Cosquer is Head of Solutions Security for the Alcatel-Lucent Corporate Solutions and Marketing organization. He previously served as CTO Security and Technology Strategist for the Alcatel-Lucent Enterprise Business Group. Over the past 18 years, he has held senior positions with research institutions, equipment vendors and telecommunications operators. He draws on extensive experience in security architecture, networking, operating systems, middleware and multimedia applications. He has been speaker, panelist and chair at key industry events and conferences. François graduated in Electronics and Computing and holds an MSc in Computer Science and a Ph.D. in Computer Engineering. He currently serves as Adjunct Professor at the Faculty of Engineering and Computer Science, University of Concordia, Montreal.

Prof. Upkar Varshney is on the faculty of Computer Information Systems (Associate Professor) at Georgia State University, Atlanta (<http://www.cis.gsu.edu/~uvarshne>). He received a Bachelor of Engineering in Electrical Engineering with Honors from University of Roorkee (now Indian Institute of Technology, IIT-Roorkee), and, MS in Computer Science and a Ph.D. in Telecommunications & Networking, from the University of Missouri-Kansas City. His research and teaching interests include wireless networks, pervasive healthcare, and mobile commerce.. He has written over 130 papers in these topics in major journals and international conferences. Several of his papers are among the most cited references in wireless and healthcare. He is the founding chair of International Pervasive Health Conference (since 2006) and is the author of Pervasive Healthcare Computing book (2009).

Prof. Varshney has delivered several keynote speeches and has presented more than 30 extremely well received tutorials and workshops at major international conferences including WTS (2005), AMCIS (2002-2007), HICSS (1998-2006), IEEE WCNC (1999-2003), and, ACM Mobicom (2002). Upkar has received several teaching awards, including Myrone T. Greene Outstanding Teaching Award (2000 and 2004), and RCB College Distinguished Teaching Award (2002). He has organized and/or chaired more than 20 sessions at major international conferences. He is an editor or member of editorial board for International Journal of Network Management, IJWMC, Communications of the AIS, and International Journal of Mobile Communications, and has also guest edited major journals including ACM/Kluwer Journal on Mobile Networks and Applications (MONET).

Paul Farag is currently a Manager at T-Mobile USA working on the detailed engineering surrounding the IP network. Paul Farag, has worked on such projects at T-Mobile like IPv6 Transition, UMTS Rollout, Alternative Access Method in the Radio Access network, and content delivery projects. Currently, Paul's team is responsible for all the IP infrastructure for T-Mobile and ensures that new services are able to converge on to the new IP network.

Paul has 11 years in the wireless industry supporting the convergence of IP and wireless solutions. Before entering the wireless industry Paul also has worked for large and small enterprises as well as had a number of consulting roles.

Paul graduated Cal Poly Pomona in 1995 with CIS Major and emphasis in Telecommunications. Paul also completed his MBA in 2004.

Stephen Weinstein, an IEEE Life Fellow, had a career with Bell Laboratories, American Express, Bellcore (Telcordia), and NEC Research Labs America. He is now a part-time consultant (Communication Theory & Technology Consulting Corp.) to industry and law firms.

At Bell Labs in the early 1970s, Dr. Weinstein contributed to techniques for high-speed voiceband data communication. He was the recipient of the 2006 Eduard Rhein Foundation (Germany) Basic Research Award for early work on OFDM. As a department head at Bellcore from 1984 through 1993, he led development of networked multimedia applications. He is the author of *Getting the Picture: A Guide to CATV and the New Electronic Media* (IEEE Press, 1984), co-author of the textbook *Data Communication Principles* (Plenum, 1992), and is the author of *The Multimedia Internet* (Springer, 2005), an overview of the technologies supporting audio/video media on the Internet. Presently vice-chair of the IEEE Awards Board, he served as President (1996-97) of the IEEE Communications Society.

David Goodman is Professor Emeritus at Polytechnic Institute of NYU, where he was Director of the Wireless Internet Center for Advanced Technology (WICAT) and a consultant on wireless communications technology. Before retiring from NYU-Poly in 2008, he had a 40 year research and management career in industry (Bell Labs, retiring as Head of the Radio Research Department), academia (Rutgers, where he founded the Wireless Information Network Laboratory [WINLAB] and NYU-Poly), and government (Program Director in the National Science Foundation's Computer and Network Systems Division).

Stan Moyer is Executive Director and strategic research program manager in the Applied Research area of Telcordia, where he has worked since 1990. Currently, Stan is leading research and business development on data privacy for consumer applications and services. In the past, he led research and business development activities related to mobile messaging, digital content services and home networking. Stan is past-president of the OSGi(tm) Alliance, an industry consortium creating specifications for the managed delivery of networked services. He is also a member of the board and the Director of Marketing and Industry Relations for the IEEE Communications Society. He has held many other volunteer roles within the IEEE Communications Society over the past twenty years.

Stan received an M.E. degree in electrical engineering from the Stevens Institute of Technology, an MBA in Technology Management from the University of Phoenix, and a B.S. degree in Engineering Physics from the University of Maine.

Adam Drobot joined 2M Companies in July 2010. With over 35 years of wide-ranging experience as a technologist and hands on manager, Adam brings a unique viewpoint and capabilities to the 2M team. He is responsible for analysis, evaluation, and development of high tech business opportunities and is the lead for specific investments.

At 2M Adam serves in the following capacities: CEO & Chairman of

WhiteSpaceDB (WSDB), a 2M company focused on enabling low-latency high bandwidth operations for mobile and fixed wireless communications; Chairman (non-executive) of CebaTech, a 2M company that develops acceleration platforms & IP core solutions in data networking & storage systems; Science Advisor to 2MBiotech, which partners with research groups, universities, investors, and earlystage biotech firms to accelerate the commercialization of products & technologies

Peter Magill received his B.S. in Physics from the University of Dayton, Ohio in 1979 and his Ph.D. in Physics from the Massachusetts Institute of Technology in 1987. He then joined AT&T Bell Labs at Crawford Hill where he worked on the characterization of advanced lasers, optical access networks and data-over-cable access protocols. He transferred with Lucent Technologies as it was spun out of AT&T in 1996, to head their access research department. He managed the R&D of passive optical network (PON) systems and cable modem headend equipment. In 2000 he returned to AT&T and is now Executive Director, Optical Systems Research in Middletown, NJ concerned with advancing fiber communication technologies for the entire network (inter-city, metro and access) including high-speed transmission systems (100 Gb/s and beyond) and dynamic-wavelength networks. Since 2007 he has been working on assessing, with a goal of reducing, AT&T's electricity consumption.

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