### IEEE GLOBECOM 2009 PROGRAM (30 November 2009 & 4 December 2009)

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday, 30 November</th>
<th>Tuesday, 1 December</th>
<th>Wednesday, 2 December</th>
<th>Thursday, 3 December</th>
<th>Friday, 4 December</th>
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<tr>
<td>7:45</td>
<td>Morning Tutorials</td>
<td>GEOSS Wkshps</td>
<td>IPv6 Forum</td>
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<td>Morning Tutorials</td>
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<tr>
<td>9:00 - 10:30</td>
<td>Wkshps</td>
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<tr>
<td>10:30-11:00</td>
<td>Coffee Break</td>
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<tr>
<td>11:00 - 12:30</td>
<td>Morning Tutorials</td>
<td>GEOSS Wkshps</td>
<td>IPv6 Forum</td>
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<td>Wkshps (cont’d)</td>
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<tr>
<td>12:30 - 14:00</td>
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<td>Lunch Break</td>
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<td>Afternoon Tutorials</td>
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<td>Wkshps (cont’d)</td>
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<tr>
<td>18:30 - 21:30</td>
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<td>WiCE Reception</td>
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**Keynote Forums**
**Technical Symposia**
**Business Forums**
**Special Sessions**
**Professional Development Activities**
**Social Activities**

**Note:** Please note that some workshops may have slightly different schedules. Please check the individual workshop programs to determine the exact schedule.

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### IEEE GLOBECOM 2009 PROGRAM (1 - 3 December 2009)

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<td>D&amp;D Forum</td>
<td>D&amp;D Forum</td>
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<td>EntNet Forum</td>
<td>Tech Oral Sessions</td>
<td>Access Forum</td>
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<tr>
<td>12:15 - 14:00</td>
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<td>Lunch Break (on your own)</td>
<td>Lunch Break (on your own)</td>
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<td>14:00 - 16:00</td>
<td>Tech Oral Sessions</td>
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<td>EntNet Forum</td>
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<td>16:00 - 16:30</td>
<td>Coffee Break</td>
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<td>16:30 - 18:30</td>
<td>Tech Oral Sessions</td>
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<td>D&amp;D Forum</td>
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**Exhibits**

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**Ride the Wave to Global Connectivity**
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Ride the Wave to Global Connectivity
### TECHNICAL SYMPOSIA CHAIRS

**Ad Hoc, Sensor and Mesh Networking Symposium**
- Chairs: Azzedine Boukerche, University of Ottawa
  - Nizar Bouabdallah, INRIA
  - Chunxiaowei Chi, Michigan Tech
  - Ashfaq Khokhar, University of Illinois at Chicago

**Communications and Information Security Symposium**
- Chairs: Abderrahim Benslimane, LIA/CERI
  - Stamatis V. Kartalopoulos, University of Oklahoma
  - Guenter Schaefer, Technical University of Ilmenau

**Communications Software and Services Symposium**
- Chairs: Pascal Lorenz, University of Haute Alsace
  - Young-Tak Kim, Yeungnam University
  - Bipul Sikdar, Rensselaer Polytechnic Institute
  - Qian Zhang, Hong Kong University of Science and Technology

**Communications Quality of Service, Reliability and Performance Modeling Symposium**
- Chairs: Fabrizio Granelli, DISI, University of Trento
  - Hajime Nakamura, KDDI R&D Labs. Inc.

**Communications Theory Symposium**
- Chairs: Méréouane Debbah, SUPELEC
  - Elza Erkip, Polytechnic Institute of NYU
  - Syed Ali Jafar, University of California, Irvine
  - Lars K. Rasmussen, University of South Australia

**NGN - Next Generation Networking and Internet Symposium**
- Chairs: Nasir Ghanbari, University of New Mexico
  - Ashwin Gumaste, IIT Bombay/ MIT
  - Xiaoming Fu, University of Goettingen
  - Deep Nidhi, University of Missouri-Kansas City

**Optical Networks and Systems Symposium**
- Chairs: Alberto Bononi, University di Parma
  - Arunima Jha, University of Windsor
  - Galen Sasaki, University of Hawaii
  - Nanaki Yamanaka, Keio University

**Signal Processing for Communications Symposium**
- Chairs: Hung Henry Nguyen, The Aerospace Corporation
  - Tomohiko Taniguchi, Fujitsu Laboratories Limited
  - Hsiao-Chun Wu, Louisiana State University

**Wireless Communications Symposium**
- Chairs: Cheng Li, Memorial University of Newfoundland
  - Robert Schober, University of British Columbia
  - Jingxian Wu, University of Arkansas
  - Alberto Zanella, National Research Council (CNR)

**Wireless Networking Symposium**
- Chairs: Tarik Taleb, NEC Europe Ltd.
  - Jiang (Linda) Xie, University of North Carolina, Charlotte
  - Maria Luisa Merani, University of Modena and Reggio Emilia

**Selected Areas in Communications Symposium**
- Chair: Tarek El-Bawab, Jackson State University

**SAC (CRN) - SAC-Cognitive Radio Networks**
- Track Chair: Mainak Chatterjee, University of Central Florida

**SAC (CN) - SAC-Consumer Networks**
- Track Chair: Kwang-Cheng Chen, National Taiwan University
  - Track Vice Chair: Phone Lin, National Taiwan University

**SAC (DS) - SAC-Data Storage**
- Track Chair: M. Fatih Erden, Seagate Technology
  - Track Vice Chair: Hao Zhong, LSI Corporation

**SAC (ET) - SAC-Emerging Technologies for Access Systems and Networks**
- Track Chair: Masaaki Katayama, Nagoya University

**SAC (SSC) - SAC-Satellite and Space Communications**
- Track Chair: Claudio Sacchi, University of Trento

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- Roberto Saracco, Telecom Italia

**EXPO CHAIR**
- Ning Cheung, ASTR

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- Robert Walp

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  - Jeff Friedhoff, MIT Lincoln Laboratory

**ENTNET BUSINESS FORUM CHAIR**
- Dan Minoli

**IPv6 FORUM**
- Latif Ladid, President IPv6 Forum

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**KEYNOTE FORUMS CHAIR & TECHNOLOGY LEADER FORUM CHAIR**
- Mahmoud Daneshmand, AT&T Labs Research

**CEO FORUM CHAIR**
- Matt Bross, Huawei Technologies

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**GIMS ADVISOR**
- Mark Karol, Telcordia Technologies

**GTC ADVISOR**
- Mehmet Ulema, Manhattan College

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  - Kerrianne Sullivan, IEEE Communications Society

**SECRETARY**
- Giorgio Millamena, IEEE Communications Society

**WEB CONTENT**
- Phyllis O’Neill, IEEE Communications Society
It is our great pleasure to WELCOME you to the IEEE Global Communications Conference, IEEE GLOBECOM 2009,
30 November – 4 December 2009 in Honolulu, Hawaii.

Hawaii is the central meeting place of the Pacific, if not the world. The setting of the IEEE Communications Society's premier flagship conference in beautiful Hawaii will provide a unique opportunity to explore the hottest areas of information and communications technology related to industry, academia, government, enterprise and other market segments from around the world. The Honolulu venue will also offer participants - and those accompanying them - an opportunity to explore the paradise of the Hawaiian islands. In this idyllic setting, you will be able to network with friends, colleagues, customers and vendors from around the world.

The theme of IEEE GLOBECOM 2009, "Riding the Wave to Global Connectivity," is specifically matched to the conference location, setting the conference's focus on leading edge coverage of communications with and across all parts of our planet (and beyond). IEEE GLOBECOM 2009 features:

Technical Program
- Technical Symposia - providing numerous technical sessions with papers presenting the latest technical advances through peer-reviewed paper sessions.
- Tutorials - offering education for keeping up with new and emerging topics essential to today's engineering and technology environment.
- Workshops - with specialized focus on the latest breakthroughs in information and communications technology in an environment that encourages discussion and debate

Communications Exhibition (EXPO)
- Keynote Forums - top industry leaders share their visions and experiences, and challenge us in exciting, new ways.
- Business Forums - featuring exciting panel sessions on Design & Development, Enterprise Networking, Access (e.g., "the last mile") and IPv6.
- Exhibits - where major vendors and service providers have the opportunity to display their latest products and services.
- Co-Located Events - Global Earth Observation System of Systems (GEOSS) Workshop on Mitigation and Management of Disasters through Communications

Professional Development
- Career Forums - dedicated to students, entrepreneurs and anyone interested in furthering their career development, featuring groups such as Women in Engineering (WIE) and Graduates of the Last Decade (GOLD).

Our goal is to make your participation in IEEE GLOBECOM 2009 one of the most valuable and memorable experiences of your life from both professional and personal perspectives. Welcome to Hawaii!

Aloha,
Doug and Ross
On behalf of the entire
Technical Program Committee,
I welcome you to
IEEE GLOBECOM 2009
in Honolulu, USA!

The IEEE GLOBECOM 2009 program committee put together an outstanding program including 11 technical symposia, 10 workshops, and 24 tutorials. In addition, a comprehensive list of business forums and special sessions will bring top experts together from both the industry and academia to provide a wide set of perspectives, practices, and technical expertise.

IEEE GLOBECOM 2009 received over 3,200 symposium paper submissions, a record high in IEEE GLOBECOM history. Each paper was carefully peer-reviewed by at least three of the more than 5,000 reviewers working with more than 1,000 TPC members. We accepted 1,207 symposium submissions, for an overall acceptance rate of 34.8%. These papers will be presented in 184 sessions - 159 sessions will have lecture style presentations and 25 sessions will be in the poster style format. From the technical quality standpoint and the publication in the proceedings, IEEE GLOBECOM 2009 does not distinguish among papers regardless of their presentation format during the conference.

In addition to the symposia sessions, which cover a variety of areas ranging from wireless communications to optical networks, we have a full schedule of excellent tutorials and workshops on Monday and Friday. Among a record number of proposals, chairs of these events have selected 24 tutorials and 10 workshops for you. IEEE GLOBECOM 2009 workshops address a number of areas and community of interest that are not covered within the technical symposia. Tutorials cover both fundamental and emerging technologies in the communications and networking areas.

The technical program of IEEE GLOBECOM 2009 would not have been possible without the tremendous volunteer efforts of the entire IEEE GLOBECOM 2009 technical program committee and organizing committee. We are most grateful to the authors who submitted their work to IEEE GLOBECOM 2009, the symposia chairs and vice chairs, technical program committee members, the reviewers who have so diligently supported the peer review process, the workshop chairs who have worked so hard to organize the workshops, and everyone else who helped to put together this remarkable program for their time, dedication, and hard work.

Looking forward to seeing you in Hawaii.

Mehmet Ulema
IEEE GLOBECOM 2009
Technical Program Chair
Manhattan College
The planet is witnessing a major transformation in the telecommunications industry, with the morphing of the traditional telco into an emerging softco. This transformation is driven as a result of the infrastructures from the past not being capable to move/change/adapt on the same time cycles as customer needs. Innovation must come increasingly on software cycle times versus legacy hardware infrastructure-based cycle times in order to meet customer expectations. This emerging customer expectation drives the need for more agile development. There are three key factors that interplay in the transformation of service providers from a telco to a softco. They are web services (such as Web 2.0), software-driven platforms and next-generation network technologies.

In this forum, executive-level speakers will address strategies for:

- Delivering service innovation;
- Unlocking the investments being made in broadband;
- Future networks such as NGN; and
- System-software processes enabling service providers to effectively compete in the 21st century.

Speakers:

**DooWhan Choi - President, Korea Telecom**

Dr. Choi is President of KT in charge of Service Design and New Business Development of KT. He rejoined the executive team of KT in late 2006 along with his years of experience in the areas of telecommunication equipment, wireless services, and media business. He previously worked at KT from 1991 to 1994 as Managing Director in charge of both fiber optic systems R&D and PCS systems R&D. Prior to joining KT, he was the Member of Technical Staff of Bell Labs from 1984 to 1988, and Distinguished Member from 1988 to 1991. After that, Dr. Choi’s professional career included Executive Vice President & CTO of HanChang Group, and Founder and CEO of NeoWave, Inc.

**Hossein Eslambolchi - Chairman & CEO, 2020 VP**

Dr. Hossein Eslambolchi is chairman of 2020 Venture Partners, which provides technology and operations consulting to private equity firms and venture capitalists in the area of telecommunications infrastructure. He was also chairman and CEO of Divvio Inc., a Web portal that allows users to build personalized “channels” of digital content by leveraging the best and most advanced adaptive learning technologies and Web 2.0 community behavior.

For nearly two decades, Dr. Eslambolchi led the transformation of AT&T’s network, systems and services. He left AT&T soon after its merger with SBC in late 2005. Upon his departure, BusinessWeek called him “a critical player in maintaining AT&T’s status as a technology leader” (Dec. 30, 2005) and noted that he is “a bold, but pragmatic, visionary.”

**Howard Janzen - CEO, One Communications**

Mr. Janzen is CEO of One Communications – the largest privately-held, multi-regional integrated telecommunications solutions provider in the United States. The company serves 160,000 small and mid-sized business customers in 18 states across the Northeast, Mid-Atlantic and Upper Midwest, plus the District of Columbia.

Janzan has more than 30 years of experience in the telecommunications and energy industries. Prior to joining One Communications, he was president of Sprint Business Solutions, where he was responsible for Sprint’s $12 billion worldwide business customer base, ranging from small business to Sprint’s largest domestic and international accounts. His responsibilities included integration of Sprint’s wireless, wireline, local voice and data services. Previously, he served as president of the Sprint Global Markets Group, responsible for its long distance business.

**Shyue-Ching Lu - Chairman & CEO, Chughw Telecoom**

Dr. Shyue-Ching Lu has been Chairman of Chunghwa Telecom since August 2008. Before that, he was the President since 1996. Prior to Chunghwa Telecom, he served as the Deputy Director General of Directorate General of Telecommunications (DGT), Director General at Department of Posts and Telecommunications, Ministry of Transportation and Communication, and Managing Director, Telecommunication Laboratory.

During these years, Dr. Lu was involved in transforming DGT, a government agency, into a state-owned enterprise- Chunghwa Telecom (CHT). After this restructuring, the state-owned CHT immediately faced the competition from liberalized mobile market. Under Dr. Lu’s leadership, CHT managed to compete effectively and maintains the leading position in the mobile market.

**Nate L. Smith - CEO, Time Warner Cable – Hawaii**

Mr. Smith is the President of Oceanic Time Warner Cable, which serves the entire state of Hawaii with video, high speed data and telephone services. Technology plays a huge role in Oceanic Time Warner Cable's ever-evolving concepts and Smith and his team always keep up with the latest. Mr. Smith believes that using the strengths of the two primary mediums (the television and computer) and figuring out where everybody is going and getting in front is the best way to keep Oceanic at the top. The television has its own functions, as does the home computer, but Oceanic is trying to discover ways for customers to use those units to interchangeably work with one another’s features; and then when you add to the equation the advantages of wireless devices, you get more diversity and mobility, which is so important to people today.
The world’s communications and information systems are rapidly accelerating their scale, scope and impact. Extending well beyond traditional telecom offerings, new services and applications are becoming embedded components in nearly every vertical. These developments are driving the growth in capacity and interoperability of the underlying infrastructure. The resulting need for truly global interconnectivity presents historic opportunities - and challenges.

Speaking from their own experiences, this session’s panel of industry executives will address several critical aspects of global deployments, including:

- What are the most difficult remaining challenges in achieving true global connectivity?
- Which emerging technologies are now being favored to dominate the major infrastructure, and wireless, fiber, business and residential markets?
- What services and applications will lead the surge towards a truly Digitized Society?
- How will corporate research, development and marketing strategies evolve to reflect the unique demands of global markets?

Speakers:

Ibrahim Geodeon - CTO, TELUS Communications Inc.

Ibrahim Geodeon, as the Chief Technology Officer, is responsible for technology strategy, network and services architecture and network support systems for TELUS Communications Inc. In his role as CTO, he is responsible for the Wireless-Wireline service and network convergence, enterprise applications and network infrastructure strategies and evolution.

Mr. Geodeon began his career in telecommunications engineering and research in 1990 when he joined Bell Northern Research designing signal-processing software in the cryptographic systems division. He moved to Nortel Networks in 1994 as a network design engineer, where he provided technical network design expertise to Nortel Networks’ customer base globally. He was named vice president and director of Data Network Engineering at Nortel in 1996, and vice president of Internet Brand Management in 1999, where he was responsible for IP/MPLS/ATM standards, engineering, and market development.

Youngky Kim - Executive VP, Samsung

At Samsung Electronics, Dr. Youngky Kim is currently responsible for LTE end-to-end system development and WiMAX wireless technology in the Digital Media & Communications R&D Center. He has been internationally recognized for his expertise in wireless network technology, and led end-to-end CDMA system development, WCDMA system development, Mobile WiMAX system development, DSL network development, Core network development, IMS development and application server development. He has produced 72 US patents covering IS-54 wireless technology, IS-95 technology, EV-DO, IEEE 802.16, WCDMA, network and applications.

He has led developing and commercializing the world’s first CDMA, CDMA2000-1X, CDMA2000 1xEV-DO, and Mobile WiMAX network in 1996, 2000, 2002, and 2006 respectively. He is known as one of the founders of Mobile WiMAX technology and business. As general manager of WiBro/Mobile WiMAX division, he successfully led Mobile WiMAX standardization, the world first KT WiBro commercialization, and Sprint-Nextel’s decision on Mobile WiMAX network deployment.

Roberto Saracco - Director, Telecom Italia

Roberto Saracco is the Director of the Future Centre in Venice and responsible for long-term research and scientific communications reporting directly to the Chief Technology Officer of Telecom Italia. In 2001, he became director of the Future Centre, a research centre focusing on the economic impact of innovations in the telecommunications area.

During 1999 and 2000, Roberto proposed and delivered a World Bank project in the InfoDev framework to speed entrepreneurship in Latin American countries, and prior, 1999 and 2000, he proposed and carried out a World Bank project in the InfoDev framework to foster entrepreneurship in Latin America countries.

Manish Vyas - VP and Principal Account Executive, Tech Mahindra

Manish is a senior executive with Tech Mahindra, a Solutions Provider dedicated to the Communications ecosystem globally. He has led various strategic initiatives in North America, Asia Pacific and India. Currently servicing the firm as a VP and Geo-Head, Manish heads Client Strategy and Relationships for Tech Mahindra, North America. Over the years Manish has helped various marquee partners of Tech Mahindra to not only implement transformational and optimization programs but also in setting up operations to meet the dynamic and fast paced needs of telecom customers globally.
Global Connectivity is witnessing "information explosion" or IT Tsunami. A major challenge is the information and software systems to design, operate, manage and support the network infrastructure; protect it from fraud and intrusion; and increasingly generate revenue to justify enormous investment in information systems for smooth flow of mountains of information generated every second.

Some of the issues are:

- The information software and systems research and applications necessary for global connectivity;
- The compression and storage technologies enabling large-scale information management of streaming and temporal as well as structured information; and
- Challenges of the real time large-scale information mining, knowledge extraction that leads to intelligent business and operation support systems.

Speakers:

**Major General George J. Allen** - Director, C4 / Deputy DON Chief Information Officer (DDCIO) of the Marine Corps

Major General Allen is the Director for Command, Control, Communications, and Computers (C4), and the Deputy DON Chief Information Officer (DDCIO) for the United States Marine Corps. Prior to this assignment, General Allen was the Commanding Officer, Marine Corps Tactical Systems Support Activity, Camp Pendleton, California.

General Allen's previous command positions include Commanding Officer, 8th Communication Battalion, MarForLant; Detachment Bravo Company Commander, Marine Wing Communications Squadron-38, 3rd Marine Aircraft Wing; Communications Platoon Commander, 31st Marine Amphibious Unit, III MEF; Multichannel Platoon Commander, Communication Company, Headquarters Battalion, 3d Marine Division, FMFPac; Radio Platoon Commander, 8th Communication Battalion, FMFLant; Wire Platoon Commander, 8th Communication Battalion, FMFLant.

**David G. Belanger** - Chief Scientist & VP, AT&T Labs

David Belanger is currently the AT&T Labs Chief Scientist, and the Vice President of Information & Software Systems Research at AT&T Labs in Florham Park, NJ. As Chief Scientist, he is responsible to the AT&T Labs President for: identifying pre-product technology important to the future of AT&T, evaluating technology, building alignment within AT&T on technology directions, and serving as AT&T liaison to external technical communities, specifically universities, government agencies and industrial laboratories. The Information & Software Systems Research Lab conducts research in: large scale and real time information mining related to operations of a (communications) service business; interactive, information visualization; scaleable, dependable software systems; and new, information based, communications services. It is also responsible for delivery and operations of very large scale (e.g. >400TB) near real time service management capabilities to AT&T and its customers, as well as a wide variety of analytic and information mining services.

**Joe Burton** - VP & CTO, Unified Communications, Cisco

Joe Burton is Vice President and Chief Technology Officer in Cisco's Voice Technology Group. His team is responsible for vision, technical strategy and advanced research for Unified Communications at Cisco. Unified Communications is suite of Internet Protocol (IP) voice, data and video products and applications designed to help organizations of all sizes streamline business processes and work more efficiently. Joe is a highly regarded visionary in our industry and an evangelist for Cisco. He has a passion for technology and innovation, as well as demonstrated business savvy that has been instrumental in several of our acquisitions including Latitude, WebEx, and Securent.

**Fredrick L. Kitson** - CVP, Motorola

Fred Kitson leads the Motorola Research Center, a global team of researchers working to uncover the next big things in media mobility. Under his leadership, the Center identifies, researches and develops disruptive breakthroughs and technology foundations that spawn new businesses for Motorola and innovative approaches to solving customer and market problems. The Center leverages Motorola's technical expertise in broadband communications to deliver multimedia without limits.

Kitson joined Motorola in 2005 as head of the Applications Research Center of Excellence, an international team of researchers focused on personal content handling and entertainment platforms. The Applications Research vision and architecture led by Kitson had a major impact on the corporate agenda, messaging and technological roadmaps of Motorola. Some of the most significant contributions include the development of a highly resilient MPEG-4 encoder/decoder that delivers high-quality video on mobile phones, liquid media concept and demonstrators to facilitate “seamless media” for different devices and applications, and home media servers to enable enhanced communications with ease of use.

**David Lassner** - VP, IT & CIO, University of Hawaii

David Lassner serves as the first Vice President and Chief Information Officer for the University of Hawaii, Hawaii's statewide system of public higher education comprised of 10 campuses and 7 education centers serving over 50,000 students on 6 islands.

David has played an active leadership role in a variety of additional local, national and international ICT organizations. He chairs the Hawaii Broadband Task Force and is the immediate past Chair of the Board of the Pacific Telecommunications Council. He has served on the Board and in leadership roles for Hawaii's High Technology Development Corporation, Internet2, the Internet Society and was recently elected to the Board of FirstMileUS.
BUSINESS FORUMS

ACCESS ’09 BUSINESS FORUM
Wednesday, 2 December 2009

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Tapa Ballroom 1

Session 102: Intelligent Optical Transport
Network Development and Deployment: Current
Status and Future Outlook
Chair: Kohei Shiomoto, NTT

Intelligent optical transport networks are expected to generate new revenue
generating services such as bandwidth-on-demand, and to provide brand-new
control mechanisms such as sophisticated protection and restoration
schemes. Control planes such as GMPLS are a key technology for intelligent
optical transport networks. Standardization of control planes has made
remarkable progress recently in the area of TDM and WSON. As a result,
product development, such as on network elements and network management
systems, has steadily progressed. And at last commercial products have been
deployed to build real intelligent optical transport networks.

This session will explore the current status and the future outlook of the
intelligent optical transport network. First, we will review the current status of
the following areas: (1) standardization development, (2) network deployment
in carrier and academic networks, and (3) product development such as
network equipment and network management systems. Then, we will discuss
what we have learned from the past experience and the future outlook for these
areas.

Invited Speakers:
Young Lee, Huawei
Shinya Nakamura, NEC America
Weiqiang Sun, Shanghai Jiao Tong University
David Hausheer, University of Zurich
Lyndon Ong, Optical Internetworking Forum (OIF)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Tapa Ballroom 1

Session 104: Advanced Fiber Access Systems
Chair: Frank Effenberger, Huawei Technologies

Now that fiber-based systems have become commonplace features of the
access network landscape, research has turned towards exploring how these
systems could evolve and change the overall architecture of the network and
services. The salient topics in this regard include:
• The evolution of the current G-PON and EPON systems toward the 10 Gb/s
  next generation;
• The concept of central office consolidation, where the inherent reach
capabilities of fiber enable the access network to be lengthened into areas
normally considered metro; and
• The possibility of peer-to-peer service enablement, where the large and
  symmetrical bandwidth capabilities of fiber allow the classic client-server
  traffic patterns to be replaced by more efficient ones.

This session will include invited talks on these and other related topics.

Invited Speakers:
Frank Effenberger, Huawei Technologies
Matthias Fricke, Deutsche Telekom
Koji Sakuda, NTT
Kenneth Kerpez, Telcordia Technologies
Bill Huang, China Mobile Research Institute

Wednesday, 2 December 2009 • 14:00 – 16:00 & 16:30 – 18:30
Location: Tapa Ballroom 3

Session 103: Advanced Wireless Networks
and Systems
Chair: Dilip Krishnaswamy, Qualcomm

This session covers recent advancements in wireless networking, including
emerging 4G protocols such as LTE and LTE-Advanced and WiMAX,
co-operative, cognitive, and adhoc wireless communications, unlicensed and
whitespace communications, emerging wireless network architectures,
EHF/VHF and alternative wireless communications such as free space optics
and radio over fiber, heterogeneous wireless communications technologies
and architectures, enterprise wireless network architectures, and business and
economic considerations related to wireless communication technologies,
arichitectures, and services.

Invited Speakers:
14:00 – 16:00 Session
Heinz Willebrand, LightPointe
Rob Roy, SAI Technology
Dilip Krishnaswamy, Qualcomm

16:30 – 18:30 Session
Amitava Ghosh, Motorola
Kai Miao, Intel
Thursday, 3 December 2009 ● 10:15 – 12:15
Location: Tapa Ballroom 3

Session 201: Knowledge Management, Social Networks, and Global Communities
Chair: Joe Betser, The Aerospace Corp.

Knowledge management and social networking are building communities of collaborators on a global scale. This emerging trend is building new communities and growing novel activities as well as introducing virtual collaboration tools. This trend is re-architecting the way by which communities interact and collaborate. New tools such as Wikis, social network tools, and tools offering improved access to knowledge and enhanced search capability, are introducing new and rich ways by which to interact and conduct business.

This panel will address this emerging change, and review these trend-setting activities from a number of perspectives.

Invited Speakers:
Mark Chun, Pepperdine University
Gabriel Jakobson, Altusys Corp.
Vijay Koduri, Google
Joe Betser, The Aerospace Corp.

Thursday, 3 December 2009 ● 14:00 – 16:00
Location: Tapa Ballroom 3

Session 203: The Path to 100 Mbps DSL Services
Chairs: John Cioffi, Stanford University; ASSIA Inc.
George Ginis, ASSIA Inc.

Realization of 100 Mbps DSL services in the range of 500m to 1km on twisted pair is the goal of various advanced strategies in DSL transmission and imminently issuing standards, largely because 100 Mbps is viewed as the maximum speed DSL customers might use in the next decade. This panel session reviews the status of 100 Mbps DSL realization and projects the realizable steps to ubiquitous high-speed DSLs, using vectoring and other methods that are part of the area known as Dynamic Spectrum Management (DSM).

Invited speakers:
Kevin Fisher, Ikanos Communications, Inc.
Axel Clausen, Infineon Technologies AG,
Miguel Peeters, Broadcom
Per-Erik Eriksson, Ericsson Research
George Ginis, ASSIA Inc.

Thursday, 3 December 2009 ● 14:00 – 16:00
Location: Tapa Ballroom 1

Session 202: Advancing Broadband, Communities and Society: Getting from Here to There
Chair: David Lassner, University of Hawaii & Hawaii Broadband Task Force Chair

Broadband is increasingly recognized as critical infrastructure for the 21st century. Yet we still face many challenges in making broadband universally available and in the adoption of the transformative applications already available that can improve quality of life and economic development. And even more advanced applications are becoming available that require even more bandwidth. Some nations and communities have taken bold approaches to viewing broadband facilities as public infrastructure, while others believe in competitive infrastructure and an unfettered marketplace. Everyone is concerned about how to stimulate demand while also ensuring that we reach the traditionally underserved, who have so often been left behind by geographic or demographic barriers. This session will explore the applications that will improve our quality of life, the challenges of universally embraced advanced broadband, and how communities and nations are developing 21st century infrastructure and services.

Invited Speakers:
Mark Hukill, Pacific Telecommunications Council
Rich Greenfield, University of Alaska
Senator David Ige, Hawaii State Senate
Stefan Karapetkov, Polycom
DooWhan Choi, Korea Telecom

Session 204: Smart Grid and Home Networks
Chair: Stefano Galli, Panasonic Corporation

Several wireless and wired broadband home networking technologies are currently available to consumers. Furthermore, recent standardization activities in IEEE P1901 and ITU-T G.hn may finally lead to the unification of the fragmented wired market. At the same time, the impetus of the US current administration in facilitating the deployment of smart grid and energy efficiency technologies, as well as the recent IEEE P2030 smart grid standard effort, will create the necessity of harmonizing in-home networks with those smart grid and energy efficiency technologies that will inevitably enter the home.

The panelists will discuss the current status and future trends of home networking and smart grid technologies, and will comment on the important issue of the architectural requirements that need to be established to make sure that these two very different applications can interoperate or at least co-exist with each other.

Invited Speakers:
Bob Heile, ZigBee Alliance
Steve Leanheart, Telcordia Technologies
Vamsi Paruchuri, University of Central Arkansas
Rob Ranck, HomePlug Powerline Alliance
Todd Ryttig, Panasonic Electric Works of America
Don Shaver, Texas Instruments
Matt Theall, HomeGrid Forum
Sessions 101 & 102: Modeling and Simulation of Wireless Networks

Chairs: Jack L. Burbank, Jon R. Ward, William T. Kasch
Johns Hopkins University Applied Physics Laboratory (JHU/APL)

Modeling and Simulation (M&S) is a critical element in the design, development, and test and evaluation (T&E) of any network product or solution. In many cases, M&S provides the only method to gain insight into the performance of the eventual product or solution in a large-scale environment, and allows for more informed design trade studies. The goal of this technical session is to provide attendees an overview of many of the M&S tools and techniques that are available to assist them in their wireless projects. The proposed full-day technical session aims to provide an overview of modeling and simulation (M&S) tools and techniques available to assist wireless network designers and developers. The proposed session is an enhanced version of previous sessions on similar M&S topics in the 2005, 2006, 2007, and 2008 Designers and Developers (D& D) Forum by the authors. Previous D&D sessions focused on presentations that explained wireless networking protocols and demonstrated the advantages of disadvantages of M&S. The proposed session offers an updated overview of wireless network technologies and M&S tools, and specific M&S examples that utilize these tools.

1) Title: Introduction to M&S
   Presenter: Jack Burbank, JHU/APL

2) Title: Wireless MAC and PHY Modeling and Simulation
   Presenter: Jon Ward, JHU/APL

3) Title: RF Propagation M&S
   Presenter: Jon Ward, JHU/APL

4) Title: Wireless Network M&S Tools
   Presenter: Jack Burbank, JHU/APL

5) Title: Scalable Network Technologies
   Presenter: invited presentation (QualNET)

6) Title: Wireless Networking Tutorial
   Presenter: Jack Burbank/Jon Ward, JHU/APL

Session 103: The Internet Resource Public Key Infrastructure (RPKI)
Chair: Stephen Kent, BBN Technologies

Routing of traffic between network service providers in the public Internet is notoriously insecure, as illustrated by Pakistan Telecom’s ‘hijacking’ of YouTube address space in 2008. In 2006, the organizations that manage the allocation of all Internet address space agreed to initiate an effort to create a public key infrastructure that attests to the allocation of these resources. This PKI is a first step in improving routing security for the public Internet. This session beings together individuals who are leading this effort, and the development of corresponding Internet standards. The speakers will describe the RPKI project and associated Internet standards, provide a status update, and discuss plans for further improvements to routing security in the public Internet.

1) Title: Resource Certification: A Public Key Infrastructure for IP Addresses and Autonomous Systems
   Presenter: Stephen Kent, BBN Technologies

2) Title: Route Origination Authorizations: The Use of Digitally Signed Objects to Support Improved Routing Security
   Presenter: Matthew Lepinski, BBN Technologies

3) Title: Address Objects to Support Improved Routing Security
   Presenter: William T. Kasch, BBN Technologies
Wireless communication operators have realized the value and potential to make information services highly personalized. One of the best ways to personalize information services is to enable them to be location based. There are many wireless technologies (GSM, WiFi, WiMax, LTE etc) competing in the commercial space, numerous methods of determining location (GPS, A-GPS, TDOA, AOA, etc) and various architectures for providing location information to clients and location applications.

1) Title: Localization in WiMAX Networks Depending on Map-Supported Path Loss Model
Presenter: Musa Bshara, Vrije Universiteit Brussels

2) Title: Three Dimensional Localization in Wireless Sensor Networks using the Adapted Multi Lateralation Technique Considering Range Measurement Errors
Presenter: Sema Oktug

3) Title: Geolocation Awareness in the Internet
Presenter: Richard Barnes, BBN Technologies

4) Title: Location Conveyance with IMS: the OMA LOCSIP Service Enabler
Presenters: Mike Loushine & Don Lukacs, Telcordia Applied Research

Vehicles have been operating on roadways on this planet for more than a century in an isolated way. We are at the right time to connect these vehicles and bring our society into a new age. Similar to the evolution of computer networks, when millions of computers were connected to share resources and information, the Internet emerged and some profound positive changes were made to our way of our life and work.

Wireless access for vehicular environments (WAVE) technology are expected to be widely employed in the future nationwide to radically improve the road transportation environment in terms of safety, efficiency and information access. Some example applications of WAVE systems are lane change, collision avoidance, and intelligent traffic light control. Deployment of WAVE systems will fundamentally smooth the progress of ITS by providing roadways with high performance physical platforms for gathering operational data. This deployment will also turn driving and riding into a completely new experience, safer and more pleasant than ever before.

The realization of WAVE systems requires intensive research, development and manufacturing activities. This includes algorithm development for many layers of the communication protocol stack, functional definition of various parts of the infrastructure, subsequent system design, prototype assessment and massive production. WAVE has the potential to generate a fresh information technology industry based upon roadway vehicles, and this will bring the US an opportunity to grow the high-tech sector of its economy and enhance its international economic competitiveness. The magnitude and breadth of the road information infrastructure impacts on the economy of the US are substantial, multi-layered and profound.

1) Title: The IEEE P1609 Standard Activities
Presenters: Tom Kurihara, IEEE P1609 Workgroup
Justin McNew, Kapsch
Tim McGuckin, OminAir

2) Title: Service Management for ITS using WAVE (1609.3) Networking
Presenter: Tim Weil, JD Biggs and Associates

3) Title: Vehicle-to-Vehicle Communications Security
Presenter: Tao Zhang, Telcordia Technologies

4) Title: Vehicle-to-Vehicle Communications Security
Presenter: Tao Zhang, Telcordia Technologies

5) Title: Introduction of a Vehicular Networks Simulator (VSN) for Research, Design and Development of WAVE Systems
Presenter: Weidong Xiang, University of Michigan, Dearborn
IEEE ENTERPRISE NETWORKING CONFERENCE (EntNet) 2009
Tuesday, 1 December 2009 • 10:15 – 18:30 • Location: Tapa Ballroom 3

**BUSINESS FORUMS**


<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>10:15 – 10:45</td>
<td>EntNet Opening: Daniel Minoli, EntNet TPC &amp; Latif Ladid, EntNet Keynotes Chair</td>
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</table>
| 11:00 – 12:15 | Panel 1: Advances in Enterprise Networking, from Cloud Computing to Green Networks (Daniel Minoli, ENTNET, TPC)  
The Greening of IT– An Overview (Daniel Minoli, ENTNET, TPC)  
Is there such a Thing as a Green Network (David Yates, Bentley University)  
Infrastructures for Mobile Cloud Computing and Business/Enterprise Applications (Thomas Michael Bohnert, SAP) |
| 14:00 – 16:00 | Roundtable: IPv6 Advances in the Pacific Rim  
Latif Ladid, President and Founder, IPv6 Forum  
Japan: Hiroshi Miyata, IPv6 Ready Logo Executive, Manager TAHI project; IPv6 Promotion Council Japan  
Australia: Tony Hill, President Internet Society Australia; IPv6 Summit Chair  
Panel 2: Wireless and Mobility Solutions  
David Yates, Bentley University  
The Future of Wireless  
Klaus-Dieter Kohrt, Former Vice Chairman, UMTS Forum  
Asok Chatterjee, 3GPP PCG Chair; Ericsson; NTIA Member |
| 16:30 – 18:15 | IPv6 FORUM |
| 18:15 – 18:30 | EntNet Closing, Daniel Minoli, EntNet TPC & Latif Ladid, EntNet Keynotes Chair |

**IPv6 FORUM**

Monday, 30 November 2009 • 9:00 – 18:00 • Location: Tapa Ballroom 2

The NEXT BIG BAIL-OUT: Will IPv6 Save the Internet?
The IPv6 Forum is a world-wide consortium of Leading Internet vendors, service providers and National Research & Education Networks (NRENs), with a mission to promote IPv6 by improving market and user awareness, creating a quality and secure New Generation Internet and allowing world-wide equitable access to knowledge and technology. The key focus of the IPv6 Forum today is to provide technical guidance for the deployment of IPv6. IPv6 Summits are organized by the IPv6 Forum and staged in various locations around the world to provide industry and market with the best available information on this rapidly advancing technology.

**IPv6: The NEXT BIG BAIL-OUT: Will IPv6 Save the Internet?**
- Latif Ladid, President IPv6 Forum
- USG IPv6 Task Force Roadmap
  - Peter Tseronis, Chair, USG IPv6 Task Force
- Deployment of IPv6 at BECHTEL
  - Fred Wettling, Manager, Architecture and Strategic Planning, Bechtel Corporation
- Deployment of IPv6 at NTT America
  - Cody Christian, Director, Product Engineering, NTT America
- Deploying IPv6 @ AT&T
  - Simon Zelingher, VP, Global Optical, IP & Data Development, AT&T Labs
- Business Case & IPv6 Security
  - Tony Hain, Cisco; IPv6 Forum Fellow
- The New World of IPv6 Applications
  - Hiroshi Esaki, Vice Director, Japanese v6 Council
- IPv6 Viral End 2 End Application
  - Junaid Islam, President & CTO, Vider
- China Next Generation Networks
  - Liu Dong, Chair, IPv6 China Council
- Malaysia IPv6 Success Story
  - Sureswaran Ramadass, Chair, Asia Pacific IPv6 Task Force
- Taiwan IPv6 Success Story
  - Yaoming Yeh, Professor, National Taiwan Normal University
- Australian IPv6 Success Story
  - Tony Hill, President Internet Society of Australia (ISOC-AU); IPv6 Forum Australia
- ATIS and its IPv6 Preparedness
  - Asok Chatterjee, Member of the Executive Committee, ATIS Board of Directors; Vice President, Ericsson Inc.
- Deploying IPv6
  - Alan Whinery, Chief Internet Engineer, University of Hawaii
- Panel Discussion – The Way Forward
  - Designing the Collaborative IPv6 Roadmap between the US and Asia
- Conclusion and Closing Remarks

Ride the Wave to Global Connectivity
Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Honolulu Suite 2

AHSN-02: Mobility in Sensor Networks
Chair: Boleslaw Szymanski (Rensselaer Polytechnic Institute, USA)

- Multiple-Symbol Differential Decision Fusion for Mobile Wireless Sensor Networks
  Andre Lei, Robert Schober (University of British Columbia, Canada)
- Networked Ultrasonic Sensors for Target Tracking: An Experimental Study
  Hongbin Li, Di Miao, Jiming Chen, Youxian Sun (Zhejiang University, China)
  Xuemin (Sherman) Shen (University of Waterloo, Canada)
- Packet Transmission Scheduling Algorithm for Dense Wireless Sensor Networks with Mobile Sink
  Ali Sharifkhani, Norman Beaulieu (University of Alberta, Canada)
- Spatial Correlation and Mobility Aware Traffic Modeling for Wireless Sensor Networks
  Pu Wang, Ian Akyildiz (Georgia Institute of Technology, USA)
- A Motion Tendency-based Adaptive Data Delivery Scheme for Delay Tolerant Mobile Sensor Networks
  Fulong Xu, Ming Liu (University of Electronic Science and Technology of China, China)
  Jiannong Cao (Hong Kong Polytechnic University, Hong Kong)
  Guihai Chen (Nanjing University, China)
  Haigang Gong, Jinqi Zhu (University of Electronic Science and Technology of China, China)
- Distributed Target Tracking with Directional Binary Sensor Networks
  Zijian Wang, Eyuphan Bulut, Boleslaw K. Szymanski (Rensselaer Polytechnic Institute, USA)

Tuesday, 1 December 2009
10:15 – 12:15 • Location: Honolulu Suite 3

AHSN-03: Cross-Layer Protocols in WSNs
Chair: Mohamed Ibnkahla (Queen’s University, Canada)

- A Cross-Layer Mechanism for Solving Hidden Device Problem in IEEE 802.15.4 Wireless Sensor Networks
  Hsueh-Wen Tseng, Shan-Chi Yang, Ping-Cheng Yeh, Ai-Chun Pang
  (National Taiwan University, Taiwan)
- Joint Rate Control and Routing for Energy-constrained Wireless Sensor Networks with Real-time Requirement
  Meng Zheng, Wei Liang, Xiaoling Zhang, Hai-bin Yu, Peng Zeng
  (Chinese Academy of Sciences, China)
  Haiming Chen (Chinese Academy of Sciences, China)
  Li Cui (Institute of Computing Technology, China)
  Victor O. K. Li (University of Hong Kong, China)

- Joint Coding/Routing Optimization for Correlated Sources in Wireless Visual Sensor Networks
  Chenglin Li, Junni Zou, Hongkai Xiong, Yongsheng Zhang
  (Shanghai Jiao Tong University, China)
- Performance Modeling of Cognitive Wireless Sensor Networks Applied to Environmental Protection
  Elyes Bdira, Mohamed Ibnkahla (Queen’s University, Canada)
  Joel Ruiz, Jose Gallardo (CICESE University of Ottawa, Mexico)
  Luis Villasenor (CICESE, Mexico)
  Dimitrios Makrakis, Hussein Mouftah (University of Ottawa, Canada)
Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Sea Pearl Suite 5 – 6

**CTSS-01: Physical Layer Security**
Chair: Stamatios Kartalopoulos (University of Oklahoma, USA)

- Secrecy Extraction from Increased Randomness in a Time-Variant MIMO Channel
  Chan Chen, Michael Jensen (Brigham Young University, USA)

- CatchIt: Detect Malicious Nodes in Collaborative Spectrum Sensing
  Wenkai Wang (University of Rhode Island, USA)
  Husheng Li (University of Tennessee, USA)
  Yan Sun (University of Rhode Island, USA)
  Zhu Han (University of Houston, USA)

- Dogfight in Spectrum: Jamming and Anti-Jamming in Multichannel Cognitive Radio Systems
  Husheng Li (University of Tennessee, USA)
  Zhu Han (University of Houston, USA)

- LDPC Codes for Physical Layer Security
  Demijan Klinic (Georgia Institute of Technology, USA)
  Jeongseok Ha (KAIST, Korea)
  Steven W. McLaughlin (Georgia Institute of Technology, USA)
  Joao Barros (University of Porto, Portugal)
  Byung-Jae Kwak (Electronics and Telecommunications Research Institute, Korea)

- Network Security: Synchronization in Chaotic Communication Systems
  Stamatios K. Kartalopoulos (University of Oklahoma, USA)

- A Framework of Multiplicative Spread Spectrum Embedding for Data Hiding: Performance, Decoder and Signature Design
  Amir Valizadeh, Z. Jane Wang (University of British Columbia, Canada)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Sea Pearl Suite 5 – 6

**CSS-01: Peer-to-Peer Services**
Chair: Abdelhamid Mellouk (University Paris XII, France)

- Analyzing the Aggregate Download Bandwidths in Peer-to-peer Live Streaming Systems
  Yusuo Hu, Jiang Li (Microsoft Research Asia, China)

- Superchunk based Fast Search in P2P-VoD System
  Danqi Wang, Chai Kiat Yeo (Nanyang Technological University, Singapore)

- FairE9: Fair File Distribution over Mesh-Only Peer-to-Peer
  Eyal Zohar, Anat Lerner (The Open University of Israel, Israel)

- SpamResist: Making Peer-to-Peer Tagging Systems Robust to Spam
  Ennan Zhai, Ruichuan Chen (Peking University, China)
  Eng Keong Lua (Carnegie Mellon University, USA)
  Long Zhang, Huiping Sun, Zhihui Cai, Shihao Qin, Zhong Chen (Peking University, China)

- Time-shifted Streaming in a Peer-to-Peer Video Multicast System
  Jeonghun Noh, Aditya Mavlankar (Stanford University, USA)
  Bernd Girod (Stanford University, USA)

- A Multicast-based Bootstrap Mechanism for Self-organizing P2P Networks
  Simone Cirani, Luca Veltri (University of Parma, Italy)
Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Lehua Suite
**NGNI-01: Emerging Networking I**
*Chair: Vinod Mishra* (Defense Information Systems Agency, USA)

**MobiSN: Semantics-based Mobile Ad Hoc Social Network Framework**
Jian Li, Samee Khan (North Dakota State University, USA)

**ANTS - A Framework for Knowledge based NAT Traversal**
Andreas Müller, Andreas Kienz, Georg Carle (Technische Universität München, Germany)

**Host Identity Protocol and Proxy Mobile IPv6: A Secure Global and Localized Mobility Management Scheme for Multihomed Mobile Nodes**
Giuliana Iapichino, Christian Bonnet (EURECOM, France)

**Economics of Femtocells**
Nikhil Shetty (University of California, Berkeley, USA)
Shyam Parekh (Alcatel-Lucent Bell Labs, USA)
Jean Walrand (University of California, Berkeley, USA)

**Energy-aware Resource Adaptation for Next-Generation Network Equipment**
Raffaele Bolla, Roberto Buschi; Franco Davoli (University of Genoa, Italy)

**Towards a Declarative Framework For Managing Application and Network Adaptations**
Palanivel Kodeshwaran, Anupam Joshi (University of Maryland Baltimore County, USA)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Coral Ballroom Lounge
**NGNI-11: Topics in Next Generation Networking (Poster)**
*Chair: Luca Valcarenghi* (Scuola Superiore Sant’Anna, Italy)

**Revenue Management in the Presence of Self-Similar Alpha-Stable Distributions**
Armin Ghayoori, Alberto Leon-Garcia (University of Toronto, Canada)

**An Integrated Mobility Framework for Pervasive Communications**
Raffaele Bolla, Riccardo Rapuzzi, Matteo Repetto (University of Genoa, Italy)

**Second-Order Differential Encoding of Deterministic Finite Automata**
Gianni Antichi, Andrea Di Pietro, Domenico Ficara, Stefano Giordano, Gregorio Procissi, Fabio Vitucci (University of Pisa, Italy)

**Detecting Trustworthy Real-Time Communications using a Web-of-Trust**
Jan Seedorf, Nico d’Heureuse; Saverio Niccolini (University of Maryland Baltimore County, USA)

**A Novel Fingerprint Location Method Using Ray-tracing**
Phillip Maher, Robert Malaney (University of New South Wales, Australia)

**Caching in Content-based Publish/Subscribe Systems**
Vasilis Sourlas (University of Thessaly, Greece)
Georgios S. Paschos (CERTH - IIT, Greece)
Paris Flegkas, Leandros Tassiulas (University of Thessaly, Greece)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Iolani Suite 1 – 2
**ONS-01: Routing and Scheduling**
*Chair: Eiji Oki* (University of Electro-Communications, Japan)

**Optical Flow Switching with Time Deadlines for High-Performance Applications**
Vincent V. S. Chan, Anurupa Ganguly, Guy Weichenberg (Massachusetts Institute of Technology, USA)

**Dynamic Routing and Scheduling for Variable Bandwidth Circuit Switching**
Ankitkumar N. Patel, Jason P. Jue (University of Texas, Dallas, USA)

**Multi-Parametric Online RWA based on Impairment Generating Sources**
Panagiotis Kokkinos, Kostas Christodouloupolos, Konstantinos Manousakis, Emmanuel Varvarigos (University of Patras, Greece)

**Dynamic Routing of Connections with Known Duration in WDM Networks**
Diego Lucerna (Politecnico di Milano, Italy)
Massimo Tornatore, Biswanath Mukherjee (University of California, Davis, USA)
Achille Pattavina (Politecnico di Milano, Italy)

**A Multilayer Routing Mechanism in Optical Networks with Extremely High Bandwidth Requests**
Xiaomin Chen, Admela Jukan (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany)
André Drummond, Nelson L. S. de Fonseca (State University of Campinas, Brazil)

**Flexible Scheduling of Multicast Sessions with Different Granularities for Large Data Distribution over WDM Networks**
Dragos Andrei, Massimo Tornatore, Charles U. Martel, Biswanath Mukherjee (University of California, Davis, USA)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Sea Pearl Suite 1 – 2
**SAC(CRN)-01: Resource Allocation in Cognitive Radio Networks**
*Chair: Joseph B. Evans* (University of Kansas, USA)

**Probability-based Resource Allocation in Cognitive Radio Networks**
Xiangwei Zhou, Geoffrey Ye Li (Georgia Institute of Technology, USA)
Dongdong Li, Dandan Wang, Anthony C. K. Soong (Huawei Technologies, USA)

**Optimal Power Control for Concurrent Transmissions of Location-aware Mobile Cognitive Radio Ad Hoc Networks**
Yi Song, Jiang Xie (University of North Carolina, Charlotte, USA)

**Power Control of Cognitive Radio System in Rayleigh Fading**
Chen Sun, Yohannes D. Alemseged, Ha Nguyen Tran, Hiroshi Harada (National Institute of Information & Communications Technology, Japan)

**Fair Profit Allocation in the Spectrum Auction Using the Shapley Value**
Miao Pan, Feng Chen (University of Florida, USA)
Xiaoyan Yin (Northwestern Polytechnical University, China)
Yuguang Fang (University of Florida, USA)

**A Cognitive Radio Network Architecture without Control Channel**
Chunsheng Xin (Norfolk State University, USA)
Xiaojun Cao (Georgia State University, USA)

**Distributed Power and Admission Control for Cognitive Radios in Spectrum Underlay Networks**
John Tadrous, Ahmed Sultan (Nile University, Egypt)
Mohammed Nafie (Cairo University, Egypt)
Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Kahili Suite 2

SPC-01: Adaptive Antennas and Beamforming
Chairs: Shih Yu Chang (National Tsing Hua University of Taiwan)
Hong Nguyen (The Aerospace Corp., USA)

Robust Noise Filtering in Wideband Frequency-Invariant Beamforming with Uniform Circular Arrays
Camillo Gentile (National Institute of Standards and Technology, USA)

SNR Maximization and Distributed Beamforming in Multiuser Multi-relay Networks
Duy H. N. Nguyen, Ha H. Nguyen (University of Saskatchewan, Canada)

Super-Gaussian Loading for Robust Beamforming
Jing Gu, Patrick Wolfe (Harvard University, USA)

Multicell Multicast Beamforming with Delayed SNR Feedback
Markus Jordan, Xitao Gong, Gerd Ascheid (RWTH Aachen University, Germany)

A Low-Complexity Planar Antenna Array for Wireless Communication Applications: Performance Analysis and Beamforming
Moon-Sik Lee (Electronics and Telecommunications Research Institute, Korea)

Multi-Source Multi-Destination Relay Network: An Interference-Free Multi-Beamforming Protocol
Shouhong Zhu, Zhiguo Ding (Lancaster University, UK)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 1

WCS-01: Cooperative Communication: Relay Selection
Chair: Andreas Molisch (University of Southern California, USA)

Relay Selection and Data Transmission Throughput Tradeoff in Cooperative Systems
Virag Shah, Neelesh Mehta (Indian Institute of Science, India)
Raymond Yim (Mitsubishi Electric Research Labs, USA)

Cooperative Selection Diversity with CSI-based Amplify-and-Forward Relaying in Nakagami-m Fading Channels
Phoebe Lep Yeh (University of Sydney, Australia)

Probabilistic Relay Selection for Fast Selection Cooperation in Half-Duplex Wireless Networks
Kuang-Hao Liu, Hsiao-Hwa Chen (National Cheng Kung University, Taiwan)

Achieving Full Diversity by Selection in Arbitrary Multi-hop Amplify-and-Forward Relay Networks
Wei Shi, Sumit Roy (University of Washington, USA)

Optimal Relay-Subset Selection and Time-Allocation in Decode-and-Forward Cooperative Networks
Elizbieta Beres, Raviraj Adve (University of Toronto, Canada)

A Novel Relay Selection Scheme with Simplified Power Allocation for Wireless Relay Networks
Hua Wu, Yafeng Wang (Beijing University of Posts and Telecommunications, China)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 2

WCS-02: MIMO
Chair: Nghie Tran (McGill University, Canada)

Effective SINR Computation for Maximum Likelihood Detector in MIMO Spatial Multiplexing Systems
Tetsushi Abe, Gerhard Bauch (DocMo Euro-Laboratories, Germany)

Achieving Near-Optimal Detection Using Adaptive Joint Combination of MLD and MMSE-SIC over Spatially Correlated MIMO Channels
Lisheng Fan (Shantou University, China)
Yangyang Zhang (University College London, UK)
Yongquan Jiang (Shantou University, China)
Kai-Kit Wong (University College London, UK)

Eigenmode Transmission for the MIMO Broadcast Channel with Semi-Orthogonal User Selection
Liang Sun, Matthew R. McKay (Hong Kong University of Science and Technology, Hong Kong)

MIMO Beam-forming at 60 GHz: Analysis of Ergodic Capacity
Navid Lashkarian (San Jose State University, USA)
Karim Nasiri Toussi (SibeAm Inc., USA)

Feasibility Conditions for Interference Alignment
Cenk M. Yetis (Istanbul Technical University, Turkey)
Tianqiu Gou, Syed Jafar (University of California, Irvine, USA)
Ahmet Kayran (Istanbul Technical University, Turkey)

Nonuniform Array Design for Robust Millimeter-Wave MIMO Links
Eric Torkildson, Colin Sheldon, Upanamuy Madhow, Mark Rodwell (University of California, Santa Barbara, USA)
Tuesday, 1 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 3

WCS-03: Resource Allocation
Chair: Patrick Marsch (Technische Universität Dresden, Germany)

Subcarrier-Pair Based Resource Allocation for Cooperative AF Multi-Relay OFDM Systems
Wenbing Ding, Meixia Tao, Hua Mu (Shanghai Jiao Tong University, China)
Jianwei Huang (Chinese University of Hong Kong, Hong Kong)

Distributed Coordinated Multi-cell Transmission Based on Dual Decomposition
Antti Tolli, Harri Pennanen, Petri Komulainen (University of Oulu, Finland)

Fair Energy-Efficient Resource Allocation over Fading TDMA Channels
Xin Wang, Di Wang, Hanqi Zhuang, Salvatore D. Morgera (Florida Atlantic University, USA)

On the Rate Duality of the MIMO Interference Channel and its Application to Sum Rate Maximization
An Liu (Peking University, China)
Youjian Liu (University of Colorado, Boulder, USA)
Haige Xiang, Wu Luo (Peking University, China)

Impact of Interference Coupling - Loss of Convexity
Holger Boche, Siddharth Naik (Technical University of Berlin, Heinrich Hertz Institute, Germany)

On Optimization of Joint Base Station Association and Power Control via Benders’ Decomposition
Jieying Chen, Liping Qian, Yingjun (Angela) Zhang (Chinese University of Hong Kong, Hong Kong)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Coral Ballroom Lounge

WCS-37: Topics in Wireless Communications I (Poster)
Chair: Padmini Vellore (Memorial University of Newfoundland, Canada)

Implications of Energy Profile and Storage on Energy Harvesting Sensor Link Performance
Bharvarg Medepally, Neelesh Mehta, Chandra R. Murthy (Indian Institute of Science, India)

Centralized and Distributed Optimization of Ad Hoc Cognitive Radio Network
Yao Ma (Iowa State University, USA)
Dong In Kim (Sungkyunkwan University, Korea)

Efficient Mutual Interference Minimization and Power Allocation for OFDM-based Cognitive Radio
Md. Jahidur Rahman, Xianbin Wang, Serguei L. Primak (University of Western Ontario, Canada)

Effective Capacity Analysis of Cognitive Radio Channels for Quality of Service Provisioning
Sami Akin, Mustafa Cenk Gursoy (University of Nebraska-Lincoln, USA)

A Self-Organized Femtocell for IEEE 802.16e System
Young Jin Sang, Hae Gwang Hwang, Kwang Soon Kim (Yonsei University, Korea)

Probability Distribution of Multi-hop Multipath Connection in a Random Network
Padmini Vellore, Paul Gillard, Ramachandran Venkatesan (Memorial University, Canada)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 4

WCS-04: Multiple Access
Chair: Teng Joon Lim (University of Toronto, Canada)

Interference Cancellation Techniques for CDMA2000 1x Reverse Link
Peter Black, Yu-Cheun Jou, Rashid Attar, Jun Ma, Xin Zhang (Qualcomm Inc., USA)

Packet Acquisition for Time-Frequency Hopped Asynchronous Random Multiple Access
Hoang Nguyen, Fred Block (Massachusetts Institute of Technology Lincoln Lab, USA)

Multiple Access with Low-Density Signatures
Jaap van de Beek; Branislav Popovic (Huawei Technologies, Sweden)

Uplink Random Access Scheme with Prioritized Orthogonal Layers for OFDMA CSI Feedback
Megumi Kaneko, Kazunori Hayashi (Kyoto University, Japan)
Petar Popovski, Hiroiuki Yomo (Aalborg University, Denmark)
Hideaki Sakai (Kyoto University, Japan)

Design and Analysis of Framed Aloha based RFID Anti-collision Algorithms
Lei Zhu, Tak-shing Peter Yum (Chinese University of Hong Kong, Hong Kong)

Rate Optimization for IDMA Systems with Iterative Feedback
Tao Yang, Jinhong Yuan, Zhenning Shi (University of New South Wales, Australia)

Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Coral Ballroom 1

WNS-01: Channel Capacity
Chair: Petar Popovski (Aalborg University, Denmark)

An Analytical Expression for Service Curves of Fading Channels
Giacomo Verticale, Paolo Giacomazzi (Politecnico di Milano, Italy)

High-Order Analysis of Outage Probability in OFDMA Wireless Networks
Bo Bai, Wei Chen, Zhigang Cao (Tsinghua University, China)
Khaled B. Letaief (Hong Kong University of Science & Technology, Hong Kong)

Optimal MIMO Antenna Geometry Analysis for Wireless Networks in Underground Tunnels
Zhi Sun, Ian F. Akyildiz (Georgia Institute of Technology, USA)

Channel Coding Design to Support Asynchronous Physical Layer Network Coding
Dong Wang (Philips Research North America, USA)
Shengli Fu (University of North Texas, USA)
Kejie Lu (University of Puerto Rico at Mayaguez, Puerto Rico)

End-to-end Delay Analysis for Reliable Communications over Lossy Channels: Integrating Network Coding and ARQ Schemes
Francesco Chiti, Romano Fantacci, Russel Allan Johnson (University of Florence, Italy)
Vladimir Cmoejevic, Dejan Vukobratovic, (University of Novi Sad, Serbia)

A Proposal of New Hybrid ARQ Scheme suitable for Multi-hop Transmissions using LDPC Codes
Takayuki Hashimoto, Tetsuya Wakiyama, Koji Ishibashi, Tadahiro Wada (Shizuoka University, Japan)
Tuesday, 1 December 2009 • 10:15 – 12:15
Location: Coral Ballroom 2

WNS-02: TCP and Congestion Control
Chair: Toktam Mahmoodi (King’s College London, UK)

Performance of Different TCP Variants in IEEE 802.11 WLAN and The TCP-WOW Algorithm
Shan Chen, Braham Bensau, Ka-Lok Hung
(Hong Kong University of Science and Technology, Hong Kong)

RACING: Rate Control for Enhancing Intermittent Networking Performance for Mobile Users
Haruki Izumikawa (University of Bremen, TZI, Germany)
Dirk Kutscher (NEC Europe Ltd., Germany)
Andreas Timm-Giel, Carsten Bormann (Universität Bremen, Germany)

Combined Congestion Control and Link Selection Strategies for Delay Tolerant Interplanetary Networks
Igor Bist, Marco Cello (University of Genoa, Italy)
Tomaso Del Cola (German Aerospace Center, Germany)
Mario Marchese (University of Genoa, Italy)

Hop-by-hop Congestion Control for Wireless Mesh Networks with Multi-channel MAC
Gang Feng (University of Electronic Science and Technology of China, China)
Fei Long (Siemens, China)
Yide Zhang (University of Electronic Science and Technology of China, China)

One-Hop Call Admission Control in Heterogeneous Wireless Networks: A Queueing Analysis
Wenzhou Ouyang, Luoyi Fu, Xining Wang
(Shanghai Jiaotong University, China)
Ekram Hossain (University of Manitoba, Canada)

Improving TCP Performance during the Intra LTE Handover
Davide Pacifico, Matteo Pacifico, Fabio Fischione, Hakan Hjalmarsson, Karl Henrik Johansson (KTH Royal Institute of Technology, Sweden)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Honolulu Suite 1

AHSN-04: Energy Efficient Protocols for WSNs
Chairs: Song Ci (University of Nebraska-Lincoln, USA)
Sirisha Medidi (Boise State University, USA)

Lifetime Maximization via a New Cooperative MAC Protocol in Wireless Sensor Networks
Zhaotai, Ju Liu, Lina Zheng, Hongji Xu (Shandong University, China)

Analytical Models for the Wake-up Receiver Power Budget for Wireless Sensor Networks
Maarten Lont, Dusan Milosevic
(Eindhoven University of Technology, Netherlands)
Guido Dolmans (Holst Centre, Netherlands)
Peter Baltus, Arthur van Roermund
(Eindhoven University of Technology, Netherlands)

Optimal Flow Control for Utility-Lifetime Tradeoff in Wireless Sensor Networks
Jiming Chen, Shibo He, Youxian Sun (Zhejiang University, China)
Preetha Thulasiraman, Xuemin (Sherman) Shen
(University of Waterloo, Canada)

Energy-Efficient k-Coverage for Wireless Sensor Networks with Variable Sensing Radii
Jiong Wang (Washington State University, USA)
Sirisha Medidi, Muralidhar Medidi (Boise State University, USA)

A Battery-Aware Deployment Scheme for Cooperative Wireless Sensor Networks
Jiucui Zhang, Song Ci, Hamid Sharif, Mahmoud Alahmad
(University of Nebraska-Lincoln, USA)

Fariborz Fereydouni-Feroughzadeh, Otmane Ait Mohamed
(Concordia University, Canada)
Mohamad Sawan (École Polytechnique de Montréal, Canada)
Falah Awad (United Arab Emirates University, UAE)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Honolulu Suite 2

AHSN-05: WSNs I
Chair: Sinem Coleri Ergen (University of California, Berkeley, USA)

Analysis of IEEE 802.15.4 Sensor Networks for Event Detection
Marco Gribaudo, Daniele Manini (University of Torino, Italy)
Alessandro Nordio, Carla-Fabiana Chiasserini (Politecnico di Torino, Italy)

MAC Protocol Engine for Sensor Networks
Sinem Coleri Ergen (Telecom Italia WSN Berkeley Lab, Berkeley, USA)
Piergiuseppe Di Marco, Carlo Fischione
(Royal Institute of Technology, Sweden)

Kyong-Tak Cho, Saewoong Bahn (Seoul National University, Korea)

MRS-D: Multirate-based Service Differentiation for the IEEE 802.15.4 Wireless Sensor Network
Cheewoo Na, Yaling Yang (Virginia Polytechnic Institute & State University, USA)

SPARE MAC Enhanced: A Dynamic TDMA Protocol for Wireless Sensor Networks
Fabio Turati, Matteo Cesana (Politecnico di Milano, Italy)
Luca Campelli (CEFRIEL Politecnico di Milano, Italy)

2C-WSN: A Configuration Protocol based on TDMA Communications over WSN
Fernando Royo (University of Castilla-La Mancha, Spain)
Miguel Lopez-Guerrero (Metropolitan Autonomous University, Mexico)
Luis Orozco-Barbosa, Teresa Olivaras (University of Castilla-La Mancha, Spain)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Honolulu Suite 3

AHSN-06: WSNs II
Chair: Xi Zhang (Texas A&M University, USA)

Implementing Information Paths in a Dense Wireless Sensor Network
Masoumeh Haghpanahi, Mehdi Kalantari, Mark Shayman
(University of Maryland, USA)

Fast Sensory Data Collection By Mobility-based Topology Exploration
Constantinos Marios Angelopoulos, Sotiris Nikoletseas
(University of Patras / Computer Technology Institute, Greece)

Minimal Exposure Path Algorithms for Directional Sensor Networks
Liang Liu, Xi Zhang (Texas A&M University, USA)
Huadong Ma (Beijing University of Posts and Telecommunications, China)

A Fault Tolerant Dynamic Clustering Protocol of Wireless Sensor Networks
Lutful Karim, Nidal Nassar (University of Guelph, Canada)
Tarek Sheltami (King Fahd University of Petroleum & Minerals, Saudi Arabia)

Accelerating Initialization for Sensor Networks
Luoyi Fu, Liinghe Kong, Xuemei Liu, Min-You Wu
(Shanghai Jiao Tong University, China)

Event Reporting on Continuous Monitoring Wireless Sensor Networks
Maria E. Rivero-Angeles (Institut National de Recherche en Informatique et en Automatique/UPITA/IPN, France)
Nizar Bouabdallah (Institut National de Recherche en Informatique et en Automatique, France)
Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Coral Ballroom Lounge

**AHSN-25: Topics in Ad Hoc Sensor and Mesh Networking II (Poster)**
Chair: Yasamin Mostofi (University of New Mexico, USA)

*Performance Evaluation of Asynchronous Ranging Algorithms*
Hakyong Kim (LG Dacom, Korea)

*Transmission Delay Analysis with Finite Coding Length in Wireless Cooperative Networks*
Zhenguo Sheng (Imperial College London, UK)
Zhiguo Ding (Lancaster University, UK)
Kin K. Leung (Imperial College, UK)

*Adaptive Optimal Buffer Management Policies for Realistic DTN*
Yong Li, Mengjiong Qian, Depeng Jin, Li Su, Lieguang Zeng (Tsinghua University, China)

*Range-only Tracking in Multipath Environments - An Algorithm Based on Particle Filtering*
Thuraiappah Sathyam, Mark Hedley (Commonwealth Scientific and Industrial Research Organization, Australia)

*Fusion and Diversity Trade-offs in Cooperative Estimation over Fading Channels*
Mehrzad Malmirchegini, Yasamin Mostofi (University of New Mexico, USA)

*Effect of Jamming Signals on Wireless Ad Hoc and Sensor Networks*
Jahangir Sarker, Hussein Moutfah (University of Ottawa, Canada)

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Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Iolani Suite 5 – 6

**CISS-02: Sensor and Ad Hoc Network Security**
Chair: Abderrahim Benslimane (University of Avignon & LIA/CERI, France)

*Trust-Aware In-Network Aggregation for Wireless Sensor Networks*
Hongmei Deng, Guang Jin, Kun Sun, Roger Xu, Margaret Lyell (Intelligent Automation Inc., USA)
Jahn Luke (AFRL/RYTC, USA)

*Software-Based Remote Code Attestation in Wireless Sensor Network*
Tamer AbuHmed, Ninbold Nyamaa, Daehun Nyang (Inha University, Korea)

*An Efficient Post-Deployment Key Establishment Scheme for Heterogeneous Sensor Networks*
Paul Loree, Kendall Nygard (North Dakota State University, USA)
Xiaojing Du (Temple University, USA)

*Secure Communication among Cell Phones and Sensor Networks*
Arjan Durresi (Indiana University-Purdue University Indianapolis, USA)
Vamsi Paruchuri (University of Central Arkansas, USA)

*Multipath Key Establishment against REM Attacks in Wireless Ad Hoc Networks*
Tian Lan, Ruby Lee, Mung Chiang (Princeton University, USA)

*A Novel Framework for Message Authentication in Vehicular Communication Networks*
Hong Wen, Pin-Han Ho, Guang Gong (University of Waterloo, Canada)
Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Sea Pearl Suite 3 – 4

CTS-02: MIMO and OFDM
Chair: Robert Heath (University of Texas, Austin, USA)

Analysis of Low Complexity Max Log MAP Detector and MMSE Detector for Interference Suppression in Correlated Fading
Rizwan Ghaffar, Raymond Knopp (Eurecom, France)

Interference Cancellation Based on Divergence Minimization for MIMO-OFDM Receivers
Carles Navarro Manchon, Gunvor Elisabeth Kerkelund, Bernard Fleury, Preben Mogensen, Luc Deneire, Troels Sørensen (Aalborg University, Denmark)
Christian Rom (Infineon Technologies, Denmark)

Effect of I/O Imbalance on Pilot Design for MIMO OFDM Channel Estimation
Hlaing Minn, Daniel Munoz (University of Texas, Dallas, USA)

Symbol-Wise Beamforming for Co-Channel Interference Reduction in MIMO-OFDM Systems
André Pollok, Nick Letzepis, William G. Cowley (University of South Australia, Australia)

BER Analysis for MIMO-OFDM Beamforming with MRC under Channel Prediction and Interpolation Errors
F. Javier Lopez-Martinez, Eduardo Martos-Naya, Jose F. París (University of Málaga, Spain)
Andrea Goldsmith (Stanford University, USA)

Low-Complexity OFDM Channel Estimation in the Presence of I/Q Imbalance and Phase Noise
Payam Rabiei, Won Namgoong, Naofal Al-Dhahir (University of Texas, Dallas, USA)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Lehua Suite

NGNI-02: Emerging Networking II
Chair: TBD

On the Efficiency of Inter-Domain State Advertising in Multi-Domain Networks
Yingdi Yu, Yaohui Jin, Weiqiang Sun, Wei Guo, Weisheng Hu (Shanghai Jiao Tong University, China)

ARROW-TCP: Accelerating Transmission toward Efficiency and Fairness for High-speed Networks
Jianxin Wang, Liang Rong (Central South University, China)
Xi Zhang, Jianer Chen (Texas A&M University, USA)

Adaptive Dynamic Routing Supporting Service Management for Future Internet
Sasitharan Balasubramaniam, Dimitri Botvich, Ray Carroll, Julien Mineraud, William Donnelly (Waterford Institute of Technology, Ireland)
Tadashi Nakano (Osaka University, Japan)
Tatsuya Suda (University of California, Irvine, USA)

On Handover Procedure with Data Forwarding for Reducing Buffered User Data in Base Stations
Yoshinori Kitatsuji, Yuji Noishiki, Hidetoshi Yokota (KDDI R&D Laboratories Inc., Japan)

A Distribution-Based Approach to Anomaly Detection for 3G Mobile Networks
Alessandro D’Alconzo (Forschungszentrum Telekommunikation Wien, Austria)
Angelo Coluccio, Fabio Ricciato (University of Salento, Italy)
Peter Romirer-Maierhofer (Forschungszentrum Telekommunikation Wien, Austria)

Towards Green Broadband Access Networks
Pulak Chowdhury, Massimo Tornatore, Suman Sarkar, Biswanath Mukherjee (University of California, Davis, USA)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Coral Ballroom Lounge

NGNI-12: Routing & Switching V (Poster)
Chair: Seshadri Mohan (University of Arkansas, Little Rock, USA)

Energy-Efficient Multi-Pipeline Architecture for Terabit Packet Classification
Weirong Jiang, Viktor Prasanna (University of Southern California, USA)

Frame-scheduling for Input-queued Switches with Energy Reconfiguration Costs
Andrea Bianco, Paolo Giaccone, Marco Ricca (Politecnico di Torino, Italy)

Traffic Grooming: a Changing Role in Green Optical Networks
Shu Huang (Renaissance Computing Institute, USA)
Deepa Seshadri, Rudra Dutta (North Carolina State University, USA)

ClassBenchv6: An IPv6 Packet Classification Benchmark
Qiong Sun, Xiaohong Huang, Wei Yang, Xiaolu Zhou, Yan Ma (Beijing University of Posts and Telecommunications, China)
Cong Wang (Dublin City University, Ireland)

Hole Reshaping Routing in Large-Scale Mobile Ad Hoc Networks
Peiqiang Li, Guojun Wang (Central South University, China)
Jie Wu (Florida Atlantic University, USA)
Hong-Chuan Yang (University of Victoria, Canada)

PreDA: Predicate Routing for DTN Architectures over MANET
Flavio Esposito, Ibrahim Matta (Boston University, USA)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Iolani Suite 1 – 2

ONS-02: Survivability and Reconfiguration
Chair: Jason Jue (University of Texas, Dallas, USA)

Analyzing Two Conflicting Objectives of the WDM Lightpath Network Reconfiguration Problem
Fernando Solano Donado (Warsaw University of Technology, Poland)

Tree-based Protection of Multicast Services in WDM Mesh Networks
Long Long, Ahmed Kamal (Iowa State University, USA)

Performance Analysis of Nature Inspired Heuristics for Survivable Virtual Topology Mapping
Fatma Corut Ergin (Marmara University, Turkey)
Elif Kaldırım, Aysegül Yayimli, Sima Uyar (Istanbul Technical University, Turkey)

Differentiated Quality-of-Service in Survivable WDM Mesh Networks
Sami Sebbah, Brigitte Jaumard (Concordia University, Canada)

Handling Double-Link Failures in Metro Ethernet Networks Using Fast Spanning Tree Reconnection
Jian Qu, Gurusamy Mohan, Kee Chaing Chua, Yong Liu (National University of Singapore, Singapore)

A Cross-Layer ILP Formulation for Finding p-Cycles in All-Optical Networks
Amir Askarian, Suresh Subramaniam (George Washington University, USA)
Maite Brandt-Pearce (University of Virginia, USA)
Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Sea Pearl Suite 1 – 2

**SAC(CRN)-02: Performance Analysis of Cognitive Radio Networks**
Chair: Linda Jiang Xie (University of North Carolina, Charlotte, USA)

- On Outage Capacity of Secondary Users in Fading Cognitive Radio Networks with Primary User’s Outage Constraint
  Xin Kang (National University of Singapore, Singapore)
  Rui Zhang, Ying-Chang Liang (Institute for Infocomm Research, Singapore)
  Hari Krishna Garg (National University of Singapore, Singapore)

- Channel Capacity Limits of Cognitive Radio with Imperfect Channel Knowledge
  Himal Suraweera (National University of Singapore, Singapore)
  Peter Smith (University of Canterbury, New Zealand)
  Mansoor Shafi (Telecom New Zealand, New Zealand)
  Michael Faulkner (Victoria University, Australia)

**Achievable Rate of Gaussian Cognitive Z-Interference Channel with Partial Side Information**
Yang Peng, Dinesh Rajan (Southern Methodist University, USA)

**Information Theoretic Results for Three-User Cognitive Radio Channels**
Kyatsandra G. Nagandara (Lehigh University, USA)
Chandra Murthy (Indian Institute of Science, India)

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Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Kahili Suite 2

**SAC(SSC)-02: Technologies for Next-Generation Satellite and Space Networking**
Chair: Igor Bisio (University of Genoa, Italy)

- Routing Decisions Independent of Queuing Delays in Broadband LEO Networks
  Janusz Jurski, Jozef Wozniak (Gdansk University of Technology, Poland)
  Analysis of Uncoordinated ISL Networks
  William G. Cowley, Marc P. Lavenant (University of South Australia, Australia)

- The Single Frequency Satellite Network Concept: Multiple Beams for Unified Coverage
  Giovanni E. Corazza, Claudio Palestini, Enzo Alberto Candreva, Alessandro Vanelli-Coralli (University of Bologna, Italy)

- Experimental Evaluation of Delay Tolerant Networking (DTN) Protocols for Long-Delay Cislunar Communications
  Ruhai Wang, Xuan Wu, Taoqiao Wang (Lamar University, USA)
  Tarik Taleb (NEC Europe Ltd, Germany)

- Design and Evaluation Guidelines for Bandwidth Allocation Solutions in Satellite Environments
  Igor Bisio, Mario Marchese (University of Genoa, Italy)

- DART: Enhancing Data Acceleration with Compression for Satellite Links
  Thava Iyer, Roksana Boreli, Golam Sarwar, Christoph Owermann (Information and Communications Technology Centre of Excellence, Australia)

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Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Iolani Suite 3 – 4

**SPC-02: Channel Estimation, Modeling and Equalization I**
Chairs: Chintha Tellambura (University of Alberta, Canada)
Tomohiko Taniguchi (Fujitsu Laboratories Ltd., Japan)

- Blind Channel Equalization Using Expectation Maximization of Auxiliary Objective Function for Complex Constellations
  Dongxin Xu (Infotue Inc., USA)
  Kun Yan, Hsiao-Chun Wu (Louisiana State University, USA)

- Joint Frequency Offset and Channel Estimation Methods for Two-Way Relay Networks
  Gongpu Wang (University of Alberta, Canada)
  Feifei Gao (Jacobs University, Bremen, Germany)
  Chintha Tellambura (University of Alberta, Canada)

- An EM Algorithm for Path Delay and Complex Gain Estimation of Slowly Varying Fading Channel for CPM Signals
  Habib Abeida, Jean-Marc Brossier, Laurent Ros, Jordi Vilà-Valls (GIPSA-lab/DIS, France)

- Time-Varying FIR Decision Feedback Equalization for MIMO Transmission over Doubly Selective Channels
  Imad Barhami (United Arab Emirates University, UAE)
  Marc Moonen (Katholieke Universiteit Leuven, Belgium)

- Statistical Modeling of Co-Channel Interference
  Kapil Gulati, Aditya Chopra, Brian L. Evans (University of Texas, Austin, USA)
  Keith R. Tinsley (Intel Corporation, USA)

- Tri-diagonalizing Approach on Frequency Domain Equalization in a Doubly-selective Channel
  Keisuke Saito, Julian Webber, Toshihiko Nishimura, Takeo Ohgane, Yasutaka Ogawa (Hokkaido University, Japan)

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Tuesday, 1 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 1

**WCS-05: Cooperative Communication: Beamforming**
Chair: Tony Q. S. Quek (Institute for Infocomm Research & Nanyang Technological University, Singapore)

- Effect of Feedback Delay on Downlink Amplify-and-Forward Relaying with Beamforming
  Hinal A. Suraweera (National University of Singapore, Singapore)
  Theodoros A. Tsiftsis, George K. Karagiannidis (Aristotle University of Thessaloniki, Greece)
  Michael Faulkner (Victoria University, Australia)

- Power Allocation for Beamforming Relay Networks under Channel Uncertainties
  Jinyoung Jeon, Ali H. Sayed (University of California, Los Angeles, USA)

- Downlink Distributed Beamforming through Relay Networks
  Yi Zheng, Steven Blostein (Queen’s University, Canada)

- Distributed Beamforming in Multiuser Multi-relay Networks with Guaranteed QoS
  Duy H. N. Nguyen, Ha H. Nguyen, Tung T. Pham (University of Saskatchewan, Canada)

- Cooperative Multi-User MIMO Wireless Systems Employing Precoding and Beamforming
  Wibowo Hardjawana, Branka Vucetic, Yonghui Li, Zhendong Zhou (University of Sydney, Australia)

- An Optimized Cooperative Beamforming Scheme in MIMO Relay Broadcast Channels
  Zhendong Zhou, Branka Vucetic (University of Sydney, Australia)
Tuesday, 1 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 2
WCS-06: Limited Feedback MIMO
Chair: Megumi Kaneko (Kyoto University, Japan)
Vector Perturbation Preceding for MIMO Broadcast Channel with Quantized Channel Feedback
Peng Lu, Hong-Chuan Yang (University of Victoria, Canada)
Trellis Exploration Algorithm Aided Precoder Design in Maximizing MIMO Capacity with Limited Feedback
Dalin Zhu, Balasubramaniam Natarajan (Kansas State University, USA)
Joint Power Control and Beamforming Codebook Design for MISO Channels with Limited Feedback
Behrouz Khoshnevis, Wei Yu (University of Toronto, Canada)
Limited Feedback in Multiuser MIMO OFDMA Systems Based on Rate Approximation
Jan Schreck, Peter Jung, Gerhard Wunder (Fraunhofer German-Sino Lab for Mobile Communications at Heinrich-Hertz-Institut, Germany)
Michael Ohm, Hans-Peter Mayer (Alcatel-Lucent Bell Labs, Germany)
Distributed Multicell and Multiantenna Preceding: Characterization and Performance Evaluation
Emil Björnson (Royal Institute of Technology, Sweden)
Randa Zakhour, David Gesbert (Eurecom, France)
Björn Ottersten (Royal Institute of Technology, Sweden)
Multi-Antenna Downlink Spatial Division Multiplexing with Opportunistic Feedback
Taiwen Tang, Teng Joon Lim (University of Toronto, Canada)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Coral Ballroom Lounge
WCS-38: Topics in Propagation and Channel Modeling (Poster)
Chair: Camillo Anthony Gentile
(National Institute of Standards and Technology, USA)
Reflection Coefficient Measurement for House Flooring Materials at 57-64 GHz
Javad Ahmadi-Shokouh (University of Manitoba, Canada)
Sima Noghianian (University of North Dakota, USA)
Ekram Hossain, Majid Ostad-Rahimi, James Dietrich (University of Manitoba, Canada)
SAR Analysis in Dispersive Tissues for In Vivo UWB Body Area Networks
Toshiaki Koike-Akino (Harvard University, USA)
A Comprehensive Spatial-Temporal Channel Propagation Model for the Ultra-Wideband Spectrum 2-8 GHz
Camillo Gentile, Sofia Martinez Lopez, Alfred Kik (National Institute of Standards and Technology, USA)
On-chip Integrated Antenna Structures in CMOS for 60 GHz WPAN Systems
Felix Gutierrez Jr., Kristen Parish, Theodore J. Rappaport (University of Texas, Austin, USA)
Improved Channel Sounding using Zero Correlation Zone Sequences
Reginald Cooper, Daniel Stancil (Carnegie Mellon University, USA)
Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Coral Ballroom 1

WNS-03: Cross-layer Design
Chair: Hans-Juergen Zepernick (Blekinge Institute of Technology, Sweden)

Power Allocation for Cooperative Diversity Networks with Inaccurate CSI: A Robust and Constrained Kalman Filtering Approach
Mohamad Khattar Awad, Velupillai Mahinthan, Xeumin (Sherman) Shen, Jon W. Mark (University of Waterloo, Canada)

Multi-Team Data Flow Optimization in Wireless Multi-rate Multi-hop Networks
Qian Zhang (Hong Kong University of Science and Technology, Hong Kong)

Hierarchical Network Formation Games in the Uplink of Multi-Hop Wireless Networks
Walid Saad (UNIK - University of Oslo, Norway)
Quanyn Zhu, Tamer Basar (University of Illinois, Champaign-Urbana, USA)
Zhu Han (University of Houston, USA)

Are Hjørungnes (UNIK - University of Oslo, Norway)

Distributed Joint Resource Allocation in Multi-Radio Multi-Channel Wireless Mesh Networks
Kewei Li, Furuong Wang (Huazhong University of Science and Technology, China)
Yan Zhang (Simula Research Laboratory, Norway)
Fan Zhang, Xu Xie (Huazhong University of Science and Technology, China)

Using 802.11 MAC Retransmissions for Path Selection in Multi-homed Transport Layer Protocols
Shelia Fallon, Paul Jacob, Yuanxiong Qiao (Athlone Institute of Technology, Ireland)
Liam Murphy (University College Dublin, Ireland)
Austin Hanley (Athlone Institute of Technology, Ireland)

Cross-Layer Resource Allocation for Efficient Message Dissemination in Rural Infostation Systems
Hao Liang, Weihua Zhuang (University of Waterloo, Canada)

Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Honolulu Suite 1

AHSN-07: WSNs III
Chairs: Yi Shang (University of Missouri, USA)
Arunabha Sen (Arizona State University, USA)

Fusion of Decisions Modeled as Weak Signals in Wireless Sensor Networks
Jintae Park, Kiseon Kim (Gwangju Institute of Science and Technology, Korea)
Eun Ro Kim (Agency for Defense Development, Korea)

Decentralized Cooperative Positioning and Tracking Based on a Weighted Sign Algorithm for Wireless Sensor Networks
Dong-Shing Wu, Chin-Liang Wang (National Tsing Hua University, Taiwan)

Distributed faulty sensor detection
Peng Zhuang, Dan Wang, Yi Shang (University of Missouri - Columbia, USA)

Irregular Sensing Range Detection Algorithm for Coverage Protocols in Wireless Sensor Networks
Xin Fei, Azzedine Boukerche (University of Ottawa, Canada)
Regina Araujo (Federal University of São Carlos, Brazil)

Cooperative Communications with Relay Selection for QoS Provisioning in Wireless Sensor Networks
Xuedong Liang (University of Oslo, Norway)
Ilargko Balasingham (Norwegian University of Science Technology, Norway)
Victor C. M. Leung (University of British Columbia, Canada)

Approximation Algorithm for Avoiding Hotspot Formation of Sensor Networks for Temperature Sensitive Environments
Nibedita Das, Pavel Ghosh, Arunabha Sen (Arizona State University, USA)

Tuesday, 1 December 2009 • 14:00 – 16:00
Location: Coral Ballroom 2

WNS-04: Handoff and Mobility Management
Chair: Vincent Wong (University of British Columbia, Canada)

Distributed or Centralized Mobility?
Philippe Bertin, Servane Bonjour (Orange Labs, France)
Jean-Marie Bonnin (Telecom Bretagne, France)

A QoS-Based Vertical Handoff Scheme for Interworking of WLAN and WiMAX
Dong Ma, Maode Ma (Nanyang Technological University, Singapore)

A Group-based Handoff Scheme for Correlated Mobile Nodes in Proxy Mobile IPv6
Yong Li, Yurong Jiang, Haibo Su, Depeng Jin, Li Su, Lieguang Zeng (Tsinghua University, China)

Network-based Micro-Mobility in Wireless Mesh Networks: is MPLS convenient?
Rosario G. Garroppo, Stefano Giordano, Luca Tavanti (University of Pisa, Italy)

Network Friendliness of Mobility Management Protocols
Md Sazzadur Rahman, Mohammed Altiquzzaman (University of Oklahoma, USA)

UPMT: Universal Per-application Mobility Management using Tunnels
Marco Bonola, Stefano Salsano, Andrea Polidoro (University of Roma "Tor Vergata", Italy)

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Ride the Wave to Global Connectivity | 23
A Wireless Network Coding Scheme with Forward Error Correction Code in Wireless Mesh Networks
Jeong-Yoon Lee, Woo-Jae Kim, Joo-Young Baek, Young-Joo Suh (Pohang University of Science and Technology, Korea)

Load-Balancing Gateway Selection Method in Multi-hop Wireless Networks
Kotaro Tada, Miki Yamamoto (Kansai University, Japan)

Managing Traffic Growth in Solar Powered Wireless Mesh Networks
Ghada H. Badawy, Amir A. Sayegh, Terence T. Todd (McMaster University, Canada)

A Performance Model for Integrated Wireless Mesh Networks and WLANs with Heterogeneous Stations
Yulei Wu, Geyong Min (University of Bradford, UK)
Keqiu Li (Dalian University of Technology, China)
Ahmed Y. Al-Dubai (Napier University, UK)

An Adaptive Forwarding Scheme for Message Delivery over Delay Tolerant Networks
Fen Hou, Xeumin (Sherman) Shen (University of Waterloo, Canada)

Distortion Outage Minimisation in Rayleigh Fading Using Limited Feedback
Chih-Hong Wang, Dey Subhrakanti (University of Melbourne, Australia)

Mechanism for Coding-Aware Opportunistic Retransmission in Wireless Networks
Yan Yan, Zhuang Zhao, Baoxian Zhang (Chinese Academy of Sciences, China)
Hussein Mouftah (University of Ottawa, Canada)
Jian Ma (Nokia Research Center, China)

Generalized Second Price Auction in Multi-Path Routing with Selfish Nodes
Xueyuan Su (Yale University, USA)
Sammy Chan, Gang Peng (City University of Hong Kong, Hong Kong)

Impact of Information on Network Performance -- An Information-Theoretic Perspective
Jun Hong, Victor O. K. Li (University of Hong Kong, Hong Kong)

Probabilistic Voting-Theoretic Strategies for Resource Allocation in Heterogeneous Wireless Networks
Amitav Mukherjee (University of California, Irvine, USA)

Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Kahili Suites 1
CQPRM-03: Quality and Performance in Wireless and Mobile Networks II
Chair: Stefano Giordano (University of Pisa, Italy)

Capacity Gains of Some Frequency Reuse Schemes in OFDMA Networks
ThomasBonjour, Nidhi Hegde (Orange Labs, France)

Traffic-based Study of Femtocell Access Policy Impacts on HSPA Service Quality
Shaunak Joshi, Ray Cheung, Pooya Monajemi, John D. Villasenor (University of California, Los Angeles, USA)

On the Effect of Feedback Errors in Markov Models for SR ARQ Packet Delays
Leonardo Badia (IMT Lucca Institute for Advanced Studies, Italy)

The Impact of Channel Variations on Wireless Distributed Computing Networks
Xuetao Chen, Timothy R. Newman, Dinesh Datla, Tamal Bose, Jeffrey H. Reed (Wireless@VT, USA)

Uplink Scheduler and Admission Control for the IEEE 802.16 Standard
Juliana Borin, Nelson L. S. de Fonseca (University of Campinas, Brazil)

The Impact of Mobility on OFDMA-based Cellular Systems with Reuse Partitioning
Rubén Munillo-Pérez, Carmen Rodríguez Estrella, Felipe Cruz-Pérez (Instituto Politecnico Nacional, Mexico)
Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Sea Pearl Suite 3 – 4
CTS-03: Training and Feedback
Chair: Nihar Jindal (University of Minnesota, USA)

Hybrid Pilot/Quantization based Feedback in Multi-Antenna TDD Systems
Umer Salim, David Gesbert, Dirk Stelck (Eurecom, France)
Zafer Beyaztas (Accenture, The Netherlands)

How Much Training is needed for Iterative Multiuser Detection and Decoding?
Mikko Vehkaperä (Norwegian University of Science and Technology, Norway)
Keigo Takeuchi (University of Electro-Communications, Japan)
Ralf Mueller (Norwegian University of Science and Technology, Norway)
Toshiyuki Tanaka (Kyoto University, Japan)

On Active Learning and Supervised Transmission of Spectrum Sharing Based Cognitive Radios by Exploiting Hidden Primary Radio Feedback
Rui Zhang (Institute of Infocomm Research, Singapore)

Coding Versus ARQ in Fading Channels: How Reliable Should the PHY Be?
Peng Wu, Nihar Jindal (University of Minnesota, USA)

MIMO Precoding with Limited Rate Feedback: Simple Quantizers Work Well
Mingguang Xu, Dongning Guo, Mike Honig (Northwestern University, USA)

Iterative NR Decoding and Channel Estimation for TDS-OFDM System
Quliang Xie, Kewu Peng, Fang Yang, Zhixing Yang
(Tsinghua University, China)
Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Iolani Suite 1 – 2
ONS-03: Optical Burst and Packet Switching
Chair: Ahmed Kamal (Iowa State University, USA)

Contention Resolution in Optical Burst Switched Networks using Spectral-Amplitude-Coding Optical Code Division Multiple Access
Mohammad Sowailim, Mohamed Morsy, Hossam Shalaby
(Alexandria University, Egypt)

Packet Loss Differentiation using Network Layer Packet Redundancy in Optical Packet/Burst Switched Networks
Harald Overy (Norwegian University of Science and Technology, Norway)

Scheduling Bursts using Interval Graphs in Optical Burst Switching Networks
Xiaojuan Cao, Yichuan Wang, Alexander Zelikovsky
(Georgia State University, USA)

An Absolute and Fair QoS Differentiation Scheme for DWDM OBS Networks
Abdeltouab Belbekkouche, Abdelhakim Hafid, Mariam Tagmouti,
Michel Gendreau (University of Montreal, Canada)

TCP Based Estimation Method for Loss Control in OBS Networks
Mohamed Faten Zhanzi (UGA-Canada, ENSI-Tunisia, Canada)
Halima Elbiaze, Wael Hosny, Fouad Aly
(University of Quebec, Montreal, Canada)

Graphical Probabilistic Routing Model for OBS Networks with Realistic Traffic Scenario
Martin Lévesque, Halima Elbiaze (University of Quebec, Montreal, Canada)

Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Sea Pearl Suite 1 – 2
SAC(CRN)-03: Game Theory for Cognitive Radio Networks
Chair: Dusit Niyato (Nanyang Technological University, Singapore)

A Noncooperative Spectrum Sensing Game with Maximum Network Throughput
Wei Wang, Chen He (Shanghai Jiaotong University, China)

Price of Anarchy for Cognitive MAC Games
Lok Man Law, Jianwei Huang (Chinese University of Hong Kong, Hong Kong)
Mingyan Liu (University of Michigan, USA)
Shuo-yen Li (Chinese University of Hong Kong, Hong Kong)

Optimal Power Allocation Strategy against Jamming Attacks using the Colonel Blotto Game
Yongle Wu, Beiwei Wang, K. J. Ray Liu (University of Maryland, USA)

Dynamic Power Management in Cognitive Radio Networks based on Constrained Stochastic Games
Chia-Wei Wang, Yu-Pin Hsu, Kai-Ten Feng
(National Chiao Tung University, Taiwan)

A Hierarchical Game Approach to Inter-Operator Spectrum Sharing
Mehdhi Bennis (University of Oulu, Finland)
Merouane Debbah, Samson Lasaulce (SUPELEC, France)
Alagang Anpalagan (Ryerson University, Canada)

On Spectrum Selection Games in Cognitive Radio Networks
Ilaria Malanchini, Matteo Cesana, Nicola Gatti (Politecnico di Milano, Italy)

Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Kahili Suite 2
SAC(DS)-01: Advanced Coding and Signal Processing Algorithms in Data Storage
Chairs: Hao Zhong (LSI Corporation, USA)
Fatih Erdem (Seagate Technology, USA)

Frame Synchronization for PPM-encoded Longitudinal Position Words in Magnetic Tape Storage
Giovanni Cherubini, Roy D. Cideciyan, Evangelos Eleftheriou, Jens Jelitto
(IBM Research - Zurich, Switzerland)

Compensation of PLL Loop Delay in Read Channels for Tape Storage Systems
Sedat Oelcer, Evangelos Eleftheriou (IBM Research - Zurich, Switzerland)
Robert Hutchins (IBM-STG Tucson, USA)

A New Class of MDS Erasure Codes Based on Graphs
Nattakan Puttarak, Phisan Kaewprapha (Lehigh University, USA)
Boon Chong Ng (Nanyang Technological University, Singapore)
Jing (Tiffany) Li (Lehigh University, USA)

LDPC Decoding Strategies for Two-Dimensional Magnetic Recording
Anantha Raman Krishnan, Rathnakumar Radhakrishnan, Bane Vasic
(University of Arizona, USA)

Performance Evaluation of the Probe Storage Channel
Thomas Parnell (Sigleade Europe, UK)
Haralampos Pozidis (IBM Research, Switzerland)
Oleg Zaboronski (University of Warwick, UK)

Maximum-Likelihood Sequence Detector for Dynamic Mode High Density Probe Storage
Naveen Kumar (Iowa State University, USA)
Pranav Agarwal (University of Minnesota, USA)
Aditya Ramamoorthy (Iowa State University, USA)
Murti Salapaka (University of Minnesota, USA)

Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Iolani Suite 3 – 4
SPC-03: Channel Estimation, Modeling and Equalization II
Chairs: Jingxian Wu (University of Arkansas, USA)
Tomohiko Taniguchi (Fujitsu Laboratories Ltd., Japan)

Improved BER Performance for MIMO-OFDM Systems with Interference Using Joint Parameter Estimation Spatial Filtering aided MAP Detection
Lisheng Fan (Shantou University, China)
Yangyang Zhang (University College London, UK)
Yongquan Jiang (Shantou University, China)
Kai-Kit Wong (University College London, UK)

A Reactive Tabu Search Based Equalizer for UWB MIMO-ISI Channels
Nagaraja Srinidhi, Saif K. Mohammed, Ananthanarayan Chockalingam
(Indian Institute of Science, India)

Robust Channel Estimation and Detection for Uplink Control Channel in 3GPP-LTE
Ramakrishna Raghavendra (Motorola, India)
Shirish Nagaraj (Motorola, USA)
Pradap Venkatraman Konda (Motorola, India)
Phil Fleming (Motorola, USA)

Impact of DFE Error Propagation on FEC-Based High-Speed I/O Links
Rajan Narasimha (University of Illinois, Urbana-Champaign, USA)
Nirmal Warke (Texas Instruments Inc, USA)
Naresh Shanbhag (University of Illinois, Urbana-Champaign, USA)

A Single FPGA Filter-Based Multipath Fading Emulator
Saeed Fouladi Fard, Amirhossein Alimohammad (Ukalta Engineering, Canada)
Bruce Cockburn, Christian Schlegel (University of Alberta, Canada)
Tuesday, 1 December 2009 • 16:30 – 18:30
Location: South Pacific Ballroom 1

**WCS-09: Cooperative Communication: Cellular Networks**

Chair: Dong In Kim (Sungkyunkwan University, Korea)

- **The Resource-Optimized不同的 Modulated Hybrid AF/DF Cooperative Cellular Uplink**
  - Li Wang, Lajos Hanzo (University of Southampton, UK)

- **Adaptive Multi-Tx Multi-Rx MIMO Transmission Scheme for LTE-Advanced Downlink**
  - Xiaolin Hou, Zhan Zhang, Hitotoshi Kayama (DOCOMO Beijing Labs, China)

- **Dynamical Cooperative MAC based on Optimal Selection of Multiple Helpers**
  - Yun Li, Bin Cao (Chongqing University of Post and Telecommunications, China)
  - Xiaohu You (Huazhong University of Science and Technology, China)
  - Peng Yang (Hitachi (China) Research & Development Corporation, China)

- **Impact of Mutual Coupling on MIMO Vehicle-to-vehicle Systems**
  - Alenka Zaic (Naval Research Laboratory, USA)

- **A Geometry-Based Stochastic Model for Wideband MIMO Mobile-to-Mobile Channels**
  - Xiang Cheng, Cheng-Xiang Wang (Heriot-Watt University, UK)
  - David Laurendon (University of Edinburgh, UK)

- **Stationarity Test for Wireless Communication Channels**
  - Dmitry Umansky, Matthias Pätzold (University of Agder, Norway)

- **On the alpha-mu Autocorrelation and Power Spectrum Functions: Field Trials and Validation**
  - Ugo Dias, Michel Yacoub (University of Campinas, Brazil)

- **Design of Measurement-Based Stochastic Wideband MIMO Channel Simulators**
  - Dmitry Umansky, Matthias Pätzold (University of Agder, Norway)

Tuesday, 1 December 2009 • 16:30 – 18:30
Location: South Pacific Ballroom 2

**WCS-10: Propagation and Channel Modeling**

Chair: Cheng-Xiang Wang (Heriot-Watt University, UK)

- **A Game-Theoretic Approach to Decentralized Interference-Avoidance Scheduling for Cellular Systems: Algorithm and Equilibria**
  - Igor Stanojev, Umberto Spagnolini (Politecnico di Milano, Italy)

- **A Multi-Gbps Millimeter-wave WPAN System based on STDMA with Heuristic Scheduling**
  - Chin-Sean Sum, Zhou Lan, Mohammad Azizur Rahman, Junyi Wang, Tuncer Baykas, Ryuhei Funada, Hiroshi Harada, Shuzo Kato
  - National Institute of Information & Communications Technology, Japan

- **A Low-Complexity Algorithm for Uplink Scheduling in Cooperative Cellular Networks with a Capacity-Constrained Backhaul Infrastructure**
  - Fabian Diehm, Patrick Marsch, Gerhard Fettweis
  - Technische Universität Dresden, Germany

- **CFO Estimation and Compensation in Single Carrier Interleaved OFDMA Systems**
  - Yu Zhu (Fudan University, China)
  - Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)

- **Performance of Superimposed Training-Based Channel Estimation in MIMO-CDMA Systems**
  - Ayman Assra, Wala Khamouda, Amr Youssef (Concordia University, Canada)

- **Optimal Wavelet Design for Multicarrier Modulation with Time Synchronization Error**
  - Madan Kumar Lakshmanan, Homayoun Nikookar, Dzemal Karamehmedić
  - Delft University of Technology, Netherlands

- **Closed-Form Expressions for the Exact Cramér-Rao Bound for Parameter Estimation of Arbitrary Square QAM-Modulated Signals**
  - Faouzi Bellili, Nésrine Attallah, Sofiène Affes, Alex Stephenne
  - Institut National de la Recherche Scientifique, Canada

- **EM Algorithm for Non-Data-Aided SNR Estimation of Linearly-Modulated Signals over SIMO Channels**
  - Mohamed Ali Boujilfen, Faouzi Bellili, Sofiène Affès, Alex Stephenne
  - Institut National de la Recherche Scientifique, Canada
Tuesday, 1 December 2009 • 16:30 – 18:30
Location: Coral Ballroom Lounge

**WCS-39: Topics in Resource Management (Poster)**
Chair: Hai Jiang (University of Alberta, Canada)

- **A Novel Radio Admission Control Scheme for Multiclass Services in LTE Systems**
  Manli Qian, Yi Huang, Jinglin Shi, Yao Yuan, Lin Tian (Chinese Academy of Sciences, China)
  Eryk Dutkiewicz (Macquarie University, Australia)

- **Mode Selection-Based Channel Feedback Reduction Scheme for Opportunistic Scheduling in OFDMA Systems**
  Soomin Ko, Seungmin Lee, Hojoong Kwon, Byeong Gi Lee (Seoul National University, Korea)

- **Mitigating Performance Anomaly of TFRC in Multi-Rate IEEE 802.11 Wireless LANs**
  Kenichi Kashibuchi, Yoshiaki Nemoto, Nei Kato (Tohoku University, Japan)

- **An Adaptive Rate Assignment Strategy for CDMA2000 IS-856 Subject to RAB Delay**
  Kaveh Moezzi, Seyed Kian Jalaledini, Amir Aghdam (Concordia University, Canada)
  Mehdi Alasti (Global Technology Associates)
  Vahid Tarokh (Harvard University, USA)

- **Rate Adaptation with NAK-Aided Loss Differentiation in 802.11 Wireless Networks**
  Anne N. Ngugi, Yuanzhu Peter Chen (Memorial University of Newfoundland, Canada)
  Qing Li (Southwestern University of Finance and Economics, Chengdu, China)

**Tuesday, 1 December 2009 • 16:30 – 18:30**
Location: Coral Ballroom 1

**WNS-05: Resource Management**
Chair: Zhifeng Tao (Mitsubishi Electric Research Laboratories, USA)

- **On Scheduling and Power Control in Multi-Cell Coordinated Clusters**
  Norbert Reider (Budapest University of Technology and Economics, Hungary)
  Andras Racz, Gabor Fodor (Ericsson Research, Sweden)

- **Optimum Power Allocation against Information Leak in Wireless Network**
  Shafi Bashar, Zhi Ding (University of California, Davis, USA)

- **Maintaining Utility Fairness Using Weighting Factors in Wireless Networks**
  Mehr Mehrjoo, Mohamad Khattar Awad (University of Waterloo, Canada)
  Mehrdad Dianati (University of Surrey, UK)
  Xeumin (Sherman) Shen (University of Waterloo, Canada)

- **Utility-Based Resource Allocation for Layer-Encoded Multicasting over Wireless Relay Networks**
  Yu-Ju Yu, Ai-Chun Pang, Yan-Chi Fang, Pang-Feng Liu (National Taiwan University, Taiwan)

- **MDP-based CAC for Two-Dimension Spreading VSF-OFCDM in 4G Cellular Communications**
  Ben-Jye Chang (National Yunlin University of Science and Technology, Taiwan)
  Ying-Hsin Liang (Nankai University of Technology, Taiwan)
  Chih-Hsien Wu, Yung-Fa Huang (Chaoyang University of Technology, Taiwan)
  Ren-Hung Hwang (National Chung-Cheng University, Taiwan)

**Tuesday, 1 December 2009 • 16:30 – 18:30**
Location: Coral Ballroom 2

**WNS-06: Mobility Modeling and Mobility Effect**
Chair: Maode Ma (Nanyang Technological University, Singapore)

- **Stochastic Properties and Application of City Section Mobility Model**
  Md Shohrab Hossain, Mohammed Atiquzzaman (University of Oklahoma, USA)

- **Optimal Pattern in Epidemic Networks**
  Supriya Nirkhiwale, Caterina Scoglio (Kansas State University, USA)

- **Analyzing the Effect of Node Mobility in Clustered Wireless Ad Hoc Networks**
  Yanqing Gu, R. Venkatesha Prasad, Ignas Niemegeers (Delft University of Technology, Netherlands)

- **An Efficient Multicast Search Scheme under 2D Markov Walk Model**
  Yao Yuan, Yucheng Zhang, Li Hu, Yi Huang, Manli Qian (Chinese Academy of Sciences, China)
  Jihua Zhou (Chongqing Jinmei Communication Co., Ltd, China)
  Jinglin Shi (Chinese Academy of Sciences, China)

- **Analytical Modelling of the GC-Based Handover Scheme with Heavy-Tailed Call Holding Times**
  Xiaolong Jin, Ge-yong Min, Jianmin Jiang (University of Bradford, UK)
Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Honolulu Suite 1

AHSN-10: Routing & Resource Management in WMNs
Chairs: Dharma Agrawal (University of Cincinnati, USA)
     Brahim Bensaou (Hong Kong University of Science and Technology, Hong Kong)

Diffusion based Distributed Internet Gateway Load Balancing in a Wireless Mesh Network
Bing He (University of Cincinnati, USA)
Dongmei Sun (Beijing Jiaotong University, China)
Dharma P. Agrawal (University of Cincinnati, USA)

Bandwidth Allocation for Bi-Directional End-to-End Paths in a Last-Mile Wireless Mesh Network
Ka-Lok Hung, Brahim Bensaou (Hong Kong University of Science and Technology, Hong Kong)

Channel Assignment Exploiting Partially Overlapping Channels for Wireless Mesh Networks
Yuting Liu, R. Venkatesan, Cheng Li (Memorial University, Canada)

User Density Sensitive P2P Streaming in Wireless Mesh Networks
Jigang Wen (Hunan University, China)
Jianrong Cao (Hong Kong Polytechnic University, Hong Kong)
Kun Xie, Renfa Li (Hunan University, China)

Interconnecting Wireless Mesh Networks: Challenges and Strategies
Stefan Bouckaert, Eli De Poorter, Pieter De Mil, Ingrid Moerman, Piet Demeester (Ghent University, Belgium)

Graph-based Approach for Enhancing Capacity and Fairness in Wireless Mesh Networks
Salim Nahle, Naceur Malouch (University of Paris 6, France)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Honolulu Suite 2

AHSN-11: Multi-hop Wireless Networks
Chairs: John M. Cioffi (Stanford University, USA)
        Mohammad Hoque (University of Alabama, USA)

Phase Transition Width of Connectivity of Wireless Multi-hop Networks in Shadowing Environment
Xiaojuan Ta, Guoqiang Mao, Brian D. O. Anderson (Australian National University, Australia)

Utility-Based Scheduling with Non-Deterministic Fading Channels in Wireless Multi-Hop Networks
Zheng Liu (Tianjin University, China)
Maode Ma (Nanyang Technological University, Singapore)
Jufeng Dai (Tianjin University, China)

Cooperative Strategy by Stackelberg Games under Energy Constraint in Multi-hop Relay Networks
Hyukjoon Kwon, HyungJune Lee, John M. Cioffi (Stanford University, USA)

Selecting a Spatially Efficient Cooperative Relay
Nikolaj Marchenko, Esvin Yannaz, Helmut Adam, Christian Bettstetter (University of Klagenfurt, Austria)

Multiple Radio Channel Assignment Utilizing Partially Overlapped Channels
Mohammad Hoque, Xiaoyan Hong, Farhana Afroz (University of Alabama, USA)

Capacity of Wireless Multi-hop Networks Using Physical Carrier Sense and Transmit Power Control
Eren Gurses, Raouf Boutaba (University of Waterloo, Canada)
Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Sea Pearl Suite 5 – 6

**CSS-04: Software and Protocol Technologies**
Chair: Joel J. C. P. Rodrigues (University of Beira Interior, Portugal)

- **A Framework for Developing User-Centric Services for Communication End-Points**
  Krishna Kishore Dhara, Tim I. Ross, Venkatesh Krishnaswamy (Avaya Labs Research, USA)

- **Parallel Multi Agent Middleware for Dynamic Service Reconstruction in Smart Space**
  Yoonsik Uhm, Zion Hwang, Minsoo Lee (Chung-Ang University, Korea)
  Yong Kim, Sehyun Park (Chung-Ang University, Korea)

- **Cognitive Information Service: Basic Principles and Implementation of A Cognitive Inter-Node Protocol Optimization Scheme**
  Dzmitry Kliazovich, Fabrizio Granelli (University of Trento, Italy)
  Nelson L. S. de Fonseca (State University of Campinas, Brazil)
  Radoslaw Piesiewicz (Create-Net, Italy)

- **Bundle Protocol (BP) over Licklider Transmission Protocol (LTP) for Cislunar Communications**
  Ruhai Wang, Tiaotiao Wang, Xuan Wu (Lamar University, USA)

- **A Preventive Rerouting Scheme for Avoiding Voids in Wireless Sensor Networks**
  Mohamed Aissani, Abdelhamid Mellouk (LiSSI, France)
  Nadjib Badache (University of Sciences and Technology Houari Boumediene, Algeria)
  Mohamed Djebbar (EMP School, Algeria)

- **A Distributed Bandwidth Partitioning Scheme for Concurrent Network-Coded Multicast Sessions**
  Niveditha Sundaram, Parmesh Ramanathan (University of Wisconsin, USA)

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**Wednesday, 2 December 2009 • 10:15 – 12:15**
**Location: Sea Pearl Suite 3 – 4**

**CTS-04: Network Coding and Cooperation**
Chair: Dario Fertonani (Arizona State University, USA)

- **Convolutional Codes for Network-Error Correction**
  Prasad Krishnan, B. Sundar Rajan (Indian Institute of Science, India)

- **Random Linear Network Coding for Time-Division Duplexing: Field Size Considerations**
  Daniel E. Lucani, Muriel Medard (Massachusetts Institute of Technology, USA)
  Milica Stojanovic (Northeastern University, USA)

- **Achieving Lower Distortion with Lattice Strategies in Multicast Wireless Networks**
  Ao Zhan, Chen He, Lingge Jiang (Shanghai Jiaotong University, China)

- **Joint Scheduling and Instantaneously Decodable Network Coding**
  Danail Traskov (Technical University of Munich, Germany)
  Muriel Medard (Massachusetts Institute of Technology, USA)
  Parastoo Sadeghi (Australian National University, Australia)
  Ralf Koetter (University of Illinois, USA)

- **Network Coded Cooperative Diversity with Multiple Sources**
  Lei Xiao, Daniel Costello, Thomas Fuja (University of Notre Dame, USA)

- **Cooperative Uplink of Two Mobile Stations with Network Coding based on the WiMax LDPC Code**
  Lena Chebli, Christoph Hausl, Georg Zeitler, Ralf Koetter (Technical University of Munich, Germany)
Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Coral Ballroom Lounge

CTS-15: Topics in Communications Theory II (Poster)
Chair: Eirik Rosnes (University of Bergen, Norway)

New Bounds on the Total-Squared-Correlation of Quaternary Signature Sets and Optimal Designs
Ming Li, Stella N. Batalama, Dimitris Pados
(State University of New York, Buffalo, USA)
John Matyas (Air Force Research Laboratory, USA)

On the Secondary Capacity of the Communication Protocols
Petr Popovski (Aalborg University, Denmark)
Zoran Utovskoi (University of Ulm, Germany)

On the Performance of Bit-Synchronizers in an ISI Channel and a Related Lower Bound
Amin Emad, Norman Beaulieu (University of Alberta, Canada)

Minimum-length Scheduling for Multicast Traffic under Channel Uncertainty
Anna Panteleidou (University of Oulu, Finland)
Anthony Ephremides (University of Maryland, College Park, USA)

Analysis of Delay Constrained Communications over OFDM Systems
Beatriz Soret, M. Carmen Aguayo-Torres, J. Tomás Entrambasaguas
(University of Málaga, Spain)

Energy Efficiency of Fixed-Rate Wireless Transmissions under Queuing Constraints and Channel Uncertainty
Deli Qiao, Mustafa Cenk Gursoy, Senem Velipasalar
(University of Nebraska-Lincoln, USA)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Lehua Suite

NGNI-04: Routing & Switching I
Chair: Nasir Ghan (University of New Mexico, USA)

Impact of Asymmetric Routing on Statistical Traffic Classification
Manuel Crotti, Francesco Gringoli, Luca Salgarelli (University of Brescia, Italy)

Automatic Flow Distribution and Management in Heterogeneous Networks
Yi Sun, Yuming Ge, Shan Lu (Institute of Computing Technology, China)
Eryk Dutkiewicz (Macquarie University, Australia)
Jihua Zhou (Chongqing Jinmei Communication Ltd, China)

Robust Traffic Engineering Using Multi-Topology Routing
Xiong Wang, Sheng Wang, Shizhong Xu, Le Min Li
(University of Electronic Science and Technology of China, China)

How Bad is Single-Path Routing
Meng Wang (Cornell University, USA)
Chee Wei Tan (California Institute of Technology, USA)
Ao Tang (Cornell University, USA)
Steven Low (California Institute of Technology, USA)

Multi-Commodity Flow Traffic Engineering with Hybrid MPLS/OSPF Routing
Mingui Zhang, Bin Liu (Tsinghua University, China)
Beichuan Zhang (University of Arizona, USA)

Novel Topological Framework for Adaptive Routing
Alexander Stepanenko (Aston University, UK)
Constantinos Constantinou (University of Birmingham, UK)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Iolani Suite 1 – 2

ONS-04: Optical Fiber Transmission and Monitoring
Chair: Alberto Bononi (University of Parma, Italy)

Insertion of 100Gb/s Coherent PDM-QPSK Channels over Legacy Optical Networks Relying on Low Chromatic Dispersion Fibres
Oriol Bertran-Pardo (Bell Labs, Alcatel-Lucent / Telecom ParisTech, France)
Jérémie Renaudier, Gabriel Charlet, Patrice Tran, Halk Mardoyan,
Massimiliano Salsi (Bell Labs, Alcatel-Lucent, France)
Macco Bertolini (Università di Parma, Italy)
Sébastien Bigo (Bell Labs, Alcatel-Lucent, France)

Experimental Investigation of Real Time 10Gbit/s MLSE Equalizer Using 4-states and 16-states Viterbi Detector
Daniel Fritzsche (European Center for Information and Communication Technologies, Germany)
Dirk Breuer (Deutsche Telekom AG, Laboratories, Germany)
Lars Schürer, Armin Ehhardt (Deutsche Telekom Netzproduktion GmbH, Zentrum TE, Germany)
Hamdi Oeruen (CoreOptics GmbH, Germany)
Christian Schäfer (University of the Federal Armed Forces, Germany)

Diversity Combining for Asymmetrically Clipped Optical OFDM in IM/DD Channels
Liang Chen, Brian Krongold, Jamie Evans (University of Melbourne, Australia)

Evaluation of the Impact of Filter Shape on the Performance of SOA-assisted SS-WDM Systems Using Parallelized Multicanonical Monte Carlo
Amirhossein Ghazisaeidi, Francesco Vacondio, Leslie Rusch
(Laval University, Canada)

On Analyzing the Capacity of WDM PONs
Jingjing Zhang, Nirwan Ansari (New Jersey Institute of Technology, USA)

Experimental Validation of Periodic Codes for PON Monitoring
Mohammad Mansour Rad (Laval University, Canada)
Habib Fathallah (King Saud University, Saudi Arabia)
Sophie LaRochelle, Leslie Rusch (Laval University, Canada)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Kahili Suite 2

SAC(CN)-01: Consumer Networks and Applications
Chair: Naohisa Ohta (Keio University, Japan)

An Efficient Storage Utilization for High-Quality Content Distribution in a PVR-based Community
Sungwook Chung (University of Florida, USA)
Eunsoo Kim (Hongik University, Korea)
Jonathan Liu (University of Florida, USA)

Design and Evaluation of a Wireless Body Sensor System for Smart Home Health Monitoring
Chao Chen, Carlos Pomalaza-Ráez (Indiana University-Purdue University, USA)

Minimum-cost Implementation of Traffic Information System over Wireless Mesh Network
Kaveh Shafiee, Victor C. M. Leung (University of British Columbia, Canada)

Time-Critical Data Dissemination in Cooperative Peer-to-Peer Systems
Chi-Jen Wu (National Taiwan University, Taiwan)
Cheng-Ying Li, Kai-Hsiang Yang, Jan-Ming Ho (Academia Sinica, Taiwan)
Ming-Syan Chen (National Taiwan University, Taiwan)

A Measurement Study of External Links of YouTube
Kunfeng Lai, Dan Wang (Hong Kong Polytechnic University, Hong Kong)

Real-World VANET Security Protocol Performance
Jason S. Haas, Yi-Yi-Chun Hu (University of Illinois, Urbana-Champaign, USA)
Ken P. Laberteaux (Toyota Research Institute, USA)
Wednesday, 2 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 1
WCS-13: Cooperative Communication: Signal Processing
Chair: Salama Said Iikki (University of Waterloo, Canada)
Permutation Optimization in QRD Based Multi-relay Systems
Hang Long, Kan Zheng, Meiying Wei, Fangxiang Wang, Wenbo Wang
(Beijing University of Posts and Telecommunications, China)
Preamble-Based Channel Estimation for Amplify-and-Forward OFDM Relay Networks
Bin Jiang, Haiming Wang, Xiqi Gao, Shi Jin (Southeast University, China)
Kai-Kit Wong (University College London, UK)
Optimization of Power Constrained Multi-Source Uplink Relay Networks
Yi Zheng, Steven Blostein (Queen’s University, Canada)
A New Coupling Channel Estimator for Cross-Talk Cancellation at Wireless Relay Stations
Jun Ma, Geoffrey Ye Li (Georgia Tech, USA)
Jinyun Zhang (Mitsubishi Electric Research Laboratories, USA)
Toshiyuki Kuze, Hiroki Iura (Mitsubishi Electric Corporation, Japan)
DMT Analysis of Asynchronous OFDM Decode-and-Forward Cooperative Networks
Mehdi Torbatian, Mohamed Oussama Damen
(University of Waterloo, Canada)
Joint MMSE Transceiver Design for Closed-Loop Non-Regenerative MIMO Relaying Systems
Chang-Ick Song, Kyoung-Jae Lee, Inkyu Lee (Korea University, Korea)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Sea Pearl Suite 1 – 2
SAC(CRN)-04: Dynamic Spectrum Access
Chair: Subir Biswas (Michigan State University, USA)
Analysis of Dynamic Spectrum Access with Heterogeneous Networks: Benefits of Channel Packing Scheme
Ling Luo, Sumit Roy (University of Washington, USA)
Joint Dynamics of Spectrum Allocation and User Behavior in Spectrum Markets
Yuki Saito, Koji Yamamoto, Hidekazu Murata, Susumu Yoshida
(Kyoto University, Japan)
Model-Based Opportunistic Channel Access in Dynamic Spectrum Access Networks
Manuj Sharma, Anirudha Sahoo (Indian Institute of Technology, India)
K.D. Nayak (DRDO, India)
Changqing Luo (Beijing University of Posts & Telecommunications, China)
F. Richard Yu (Carleton University, Canada)
Hong Ji (Beijing University of Posts & Telecommunications, China)
Victor C. M. Leung (University of British Columbia, Canada)
Cognitive MIMO Radio: Incorporating Dynamic Spectrum Access in Multiuser MIMO Network
Harpreet Dhillon, R. Michael Buehrer
(Virginia Polytechnic Institute / State University, USA)
Effect of Dynamic Spectrum Access on Transport Control Protocol Performance
Yogesh Kondareddy, Prathima Agrawal (Auburn University, USA)
Wednesday, 2 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 3
WCS-15: Cross-layer Design
Chair: Amir Hamed Mohsenian Rad
(University of British Columbia, Canada)

Cross-layer Congestion Control and Scheduling in Multi-hop OFDMA Wireless Networks
Pan Zhou, Guowang Miao, Benny Bing (Georgia Institute of Technology, USA)

Buffer State Information: Two-Level Water-Filling for Fixed Rate Applications
Vinay Majjigi, Daniel O’Neill, John M. Cioffi (Stanford University, USA)

Reducing Signaling and Respecting Time-Scales in Cross-Layer Protocols Design for Wireless Networks
Pablo Soldati, Mikael Johansson (Royal Institute of Technology, Sweden)

Cross-layer Optimization of Unequal Protected Layered Video over Hierarchical Modulation
David Pradas (Universitat Autonoma de Barcelona, Spain)
Amine Bouabdallah, Jerome Lacan (Institut Superieur de l’Aeronautique et de l’Espace, France)
M. Angeles Vazquez-Castro (Universidad Autonoma de Barcelona, Spain)
Michel Bousquet (Institut Superieur de l’Aeronautique et de l’Espace, France)

Optimal Multiplexed Hierarchical Modulation for Unequal Error Protection of Progressive Bit Streams
Seok-Ho Chang (University of California, San Diego, USA)
Minjoong Rim (Dongguk University, Korea)
Pamela Cosman, Laurence Milstein (University of California, San Diego, USA)

Downlink Mobile OFDMA Resource Allocation with Minimum User Rate Requests
Stelios Stefanatos (Institute of Accelerating Systems and Applications, Greece)
Christos Papathanasiou (University of Thessaly, Greece)
Nikos Dimitriou (Institute of Accelerating Systems and Applications, Greece)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 4
WCS-16: Performance Analysis
Chair: Yu Cheng (Illinois Institute of Technology, USA)

BER Performance Analysis of Multiuser Diversity with Antenna Selection in MRC MIMO Systems
Mohammad Torabi, David Haccoun (Ecole Polytechnique de Montreal, Canada)
Wessam Ajb (University of Quebec, Montreal, Canada)

Outage and Diversity Analysis of Opportunistic Beamforming over Rayleigh Channels
Serdar Ozurt, Murat Torlak (University of Texas, Dallas, USA)

On the Performance of Cascaded Generalized K Fading Channels
Imene Trigui (INRS - EMT, Canada)
Amine Laourine (Cornell University, USA)
Sofiene Affes, Alex Stephenne (INRS - EMT, Canada)

Outage-based Throughput in Wireless Packet Networks
Pedro Pinto, Moe Z. Win (Massachusetts Institute of Technology, USA)

Adaptive M-PSK Communications in the Absence of Channel Gain Estimation
Athanasiou S. Lioumpas, George K. Karagiannidis
(Aristotle University of Thessaloniki, Greece)
Diomidis S. Michalopoulos (University of British Columbia, Canada)

Achieving Close-Capacity Performance with Simple Concatenation Scheme on Multiple-Antenna Channels
Nghi H. Tran, Tho Le-Ngoc (McGill University, Canada)
Tadashi Matsumoto (CWC - Oulu, Finland)
Ha H. Nguyen (University of Saskatchewan, Canada)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Coral Ballroom Lounge
WCS-40: Topics in Wireless Communications II (Poster)
Chair: Neelesh B. Mehta (Indian Institute of Science, India)

Linear Equalizers for Quasi-synchronous Block Spreading CDMA Systems
Mohammod Z. Bocus (University of Bristol, UK)
Yue Wang, Justin P. Coon (Toshiba Research Europe Limited, UK)

Convergence Analysis of Turbo Equalization in ST Block-Coded MIMO Systems
Vijay Bhargava (University of British Columbia, Canada)

An Accurate Model for Interference from Spatially Distributed Shadowed Users in CDMA Uplinks
Neelesh B. Mehta, Sarabjot Singh (Indian Institute of Technology, India)
Andreas F. Molisch (University of Southern California, USA)

Pilot Power Protocol for Autonomus Infrastructure based Multihop Cellular Networks
Mark DeFaria, Elvino S. Sousa (University of Toronto, Canada)

Performance Analysis and Enhancement of Cooperative Reltransmission Strategy for Delay-Sensitive Real-Time Services
Wei Song (University of New Brunswick, Canada)
Weihua Zhuang (University of Waterloo, Canada)

Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Coral Ballroom 1
WNS-07: Scheduling
Chair: Rose Qingyang Hu (Mississippi State University, USA)

A Low-Complexity Beamforming-Based Scheduling for Downlink OFDMA/SDMA Systems with Multimedia Traffic
Wen-Ching Chung, Li-Chun Wang, Chung-Ju Chang
(National Chiao Tung University, Taiwan)

A Simple Greedy Algorithm for Link Scheduling with the Physical Interference Model
Dejun Yang, Xi Fang, Nan Li, Guoliang Xue (Arizona State University, USA)

Joint Link Scheduling and Routing for Directional-Antenna Based 60 GHz Wireless Mesh Networks
Xi Zhang, Hang Su (Texas A&M University, USA)

Secondary User Friendly TDMA Scheduling in Opportunistic Spectrum Access Networks
Hang Su, Xi Zhang (Texas A&M University, USA)

Long Term Fair Scheduling in a Cognitive Wireless Network with Spectrum Underlay
Bin Wang, Dongmei Zhao (McMaster University, Canada)

Localized Scheduling for Practical and Optimal Capacity Utilization in Large Wireless Networks
Yi Xu, Wenyu Wang (North Carolina State University, USA)
Wednesday, 2 December 2009 • 10:15 – 12:15
Location: Coral Ballroom 2

WNS-08: Testbeds and Experimental Measurements
Chair: Rosario G. Garroppo (University of Pisa, Italy)

QOMB: A Wireless Network Emulation Testbed
Razvan Beuran (National Institute of Information and Communications Technology, Japan)
T. T. Nguyen (Japan Advanced Institute of Science and Technology, Japan)
Toshifumi Miyachi, Junya Nakata (National Institute of Information and Communications Technology, Japan)
Ken-ichi Chinen, Yasuo Tan, Yoichi Shinoda (Japan Advanced Institute of Science and Technology, Japan)

Rapidly-Deployable Mesh Network Testbed
Michael Souryal, Andreas Wapf, Nader Moayeri (National Institute of Standards and Technology, USA)

Implication of MAC Frame Aggregation on Empirical Wireless Experimentation
Gautam Bhange (Rutgers University, USA)
Rajesh Mahindra (NEC Labs America, USA)
Ivan Seskar, Dipankar Raychaudhuri (Rutgers University, USA)

Multicast Mobility in Heterogeneous Technologies: Experimental Validation
Susana Sargento (Universidade de Aveiro, Portugal)
David Wagner (Fraunhofer FOKUS Institute, Germany)
José Rocha (Universidade de Aveiro, Portugal)
Fabiolo Mariano (Universidade de Ria “La Sapienza”, Italy)
Janusz Goscinski (AGH University of Science Technology, Poland)
Jens Möder (Fraunhofer FOKUS Institute, Germany)

Impact of TCP ACK Losses on TCP Fairness in Wireless Mesh Networks
Jae-Yong Yoo, JongWon Kim (Gwangju Institute of Science & Technology, Korea)

An Autonomous Cognitive Access Point for Wi-Fi Hotspots
Bheemarjuna Reddy Tamma, B. S. Manoj, Ramesh Rao (University of California, San Diego, USA)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Honolulu Suite 1

AHSN-13: Modeling of Ad Hoc Networks
Chair: Weihua Zhan (University of Waterloo, Canada)

Modeling the Throughput and Delay in Wireless Multihop Ad Hoc Networks
Ahmad Ali Abdullah, Fayez Gebali, Lin Cai (University of Victoria, Canada)

Modeling IEEE 802.11 DCF using Parallel Space – Time Markov Chain:
Multi-Hop Ad Hoc Networks
Kaveh Ghaboosi, Matti Latva-aho (University of Oulu, Finland)
Yang Xiao (University of Alabama, USA)
Babak Hossein H. Khalaj (Sharif University of Technology, Iran)

On Reducing Blocking Probability in Cooperative Ad Hoc Networks
Aya Basyouni, Wala Hamouda, Amr Yousef (Concordia University, Canada)

Modeling and Analysis for Emergency Messaging Delay in Vehicular Ad Hoc Networks
Khadija Abboud, Weihua Zhan (University of Waterloo, Canada)

On Hopping Strategies for Autonomous Wireless Networks
Pedro H. J. Nardelli, Giuseppe T. F. de Abreu (University of Oulu, Finland)

Optimality Bounds of the Connectivity of Adhoc Networks with Beamforming Antennas
Moritz Kiese, Christian Hartmann, Robert Vilzmann (Technische Universitaet Muenchen, Germany)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Honolulu Suite 2

AHSN-14: Vehicular Ad Hoc Networks
Chair: Xeumin (Sherman) Shen (University of Waterloo, Canada)

Periodic Broadcast Type Timing Reservation MAC Protocol for Inter-Vehicle Communications
Kenji Ito, Noriyoshi Suzuki, Satoshi Makido, Hiroaki Hayashi (Toyota Central R&D Labs., Inc., Japan)

Information Dissemination Control for Cooperative Active Safety Applications in Vehicular Ad Hoc Networks
Ching-Ling Huang, Yaser Pournahmam-Fallah, Raja Sengupta (University of California, Berkeley, USA)
Harirhan Krishnan (General Motors, USA)

MAAC: Message Authentication Acceleration Protocol for Vehicular Ad Hoc Networks
Albert Wasef, Xeumin (Sherman) Shen (University of Waterloo, Canada)

Mobility-based Clustering in VANETs using Affinity Propagation
Christine Shea, Behnam Hassanabadi, Shahrokh Valae (University of Toronto, Canada)

Position-based Directional Vehicular Routing
Daxin Tian, Kaveh Shafiee, Victor C. M. Leung (University of British Columbia, Canada)

Adaptive Message Routing with QoS support in Vehicular Ad Hoc Networks
Hanan Saleet (University of Waterloo, Canada)
Rami Langar (UPMC - Paris Universitas, France)
Otman Basir, Raouf Boutaba (University of Waterloo, Canada)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Honolulu Suite 3

AHSN-15: Medium Access Control
Chairs: Vojislav B. Masic (Ryerson University, Canada)
J. J. Garcia-Luna-Aceves (University of California, Santa Cruz, USA)

CoRe-MAC: A MAC-Protocol for Cooperative Relaying in Wireless Networks
Helmut Adam, Wilfried Elmenreich, Christian Bettstetter (University of Klagenfurt, Austria)
Sidi-Mohammed Senouci (Orange Labs, France)

Trading Delay for Fairness in MAC Design for Cognitive Personal Area Networks
Jelena Masic, Vojislav Masic (Ryerson University, Canada)

Collision-Free Asynchronous Multi-Channel Access in Ad Hoc Networks
Duy Nguyen, J. J. Garcia-Luna-Aceves, Katia Obrazczka (University of California, Santa Cruz, USA)

Brajendra Kumar Singh, Kemal Ertugrul Tepe (University of Windsor, Canada)

Adaptive Probabilistic Medium Access in MPR- Capable Ad Hoc Wireless Networks
Majid Ghanbarinejad, Christian Schlegel, Pavel Gburzynski (University of Alberta, Canada)

Continuous Contention-Assisted Transmission MAC Protocol for Wireless Ad Hoc Network
Dinh Chi Hue, Shimamoto Shigeru (Waseda University, Japan)
Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Iolani Suite 5 – 6
CISS-05: Cryptographic Algorithms and Protocols
Chair: Nei Kato (Tohoku University, Japan)

Secret-sharing based Secure Communication Protocols for Passive RFID
Harsh Kapoor, Dijiang Huang (Arizona State University, USA)

ASIC: Aggregate Signatures and Certificates Verification Scheme for
Vehicular Networks
Albert Wasef, Xeumin (Sherman) Shen (University of Waterloo, Canada)

A Group-Based Key Management Protocol for Mobile Ad Hoc Networks
Qing Chen (Tohoku University, Japan)
Xiaodong Lin (University of Ontario Institute of Technology, Canada)
Xeumin (Sherman) Shen (University of Waterloo, Canada)

Adding Integrity Verification Capabilities to the LDPC-Staircase Erasure
Correction Codes
Mathieu Cunche, Vincent Roca (INRIA, France)

Secure RFID Authentication with Efficient Key-Lookup
Mete Akgun (Tubitak UEKAE, Turkey)
Mehmet Ufuk Çağlayan, Emin Anarim (Bogazici University, Turkey)

A New Construction of Knapsack PKC By Using A Random Sequence
Yasuuyuki Murakami (Osaka Electro-Communication University, Japan)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Kahili Suite 1
CQPRM-05: Network Modeling
Chair: Noriaki Kiyomiya (NTT Service Integration Laboratories, Japan)

Performance Analysis of Communication Networks in Multi-Cluster
Systems under Bursty Traffic with Communication Locality
Yulei Wu, Geyong Min (University of Bradford, UK)
Keqi Li (Dalian University of Technology, China)
Bahman Javadi (INRIA, France)

Performance Analysis of IEEE 802.11 Ad Hoc Networks with Cooperative
ARQ in the Presence of Hidden and Exposed Terminals
Georgios Kormentzas (University of the Aegean, Greece)
Jesus Alonso-Zárate
(Telecommunications Technological Centre of Catalonia, Spain)
Luis Alonso (Universidad Politécnica de Catalunya, Spain)
Christos Verikoukis
(Telecommunications Technological Centre of Catalonia, Spain)

Network Topology Discovery through Self-Constrained Decisions
Gianni Antichi, Andrea Di Pietro, Domenico Ficara, Stefano Giordano,
Gregorio Procissi, Fabio Vitucci (University of Pisa, Italy)

Bridging the Gap between Mathematical Traffic Models and Operational
Parameters
Kristof Sleurs, Dagang Li, Emmanuel Van Lil, Antoine Van de Capelle
(Katholieke Universiteit Leuven, Belgium)

Engset Formula for Bufferless OBS/OPS: When is and When Isn’t
Lengthening the Off-Time Redundant?
Andrew Zalesky (University of Melbourne, Australia)
Eric W. M. Wong, Moshe Zukerman
(City University of Hong Kong, Hong Kong)
Hai L. Vu (Swinburne University of Technology, Australia)

Stochastic Network Calculus Models under Max-Plus Algebra
Jing Xie, Yuming Jiang (Norwegian University of Science and Technology, Norway)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Kahili Suite 2
CQPRM-06: Cross-layer Design
Chair: Yannis Viniotis (North Carolina State University, USA)

Optimizing Aggregate Throughput in 802.11 Networks through Balancing
Spatial Reuse and Transmission Rate
Junmei Qu, Zenghua Zhao, Lianfang Zhang, Yantai Shu
(Tianjin University, China)

Experimental Performance Evaluation of a MAC protocol for Cooperative
ARQ Scenarios
Christos Verikoukis
(Telecommunications Technological Centre of Catalonia, Spain)
Ana Pérez-Neira (Universitat Politècnica de Catalunya, Spain)
Jesus Alonso-Zárate
(Telecommunications Technological Centre of Catalonia, Spain)
Harry Skianis (University of the Aegean, Greece)

Joint Power Control and FEC Unequal Error Protection for Scalable H.264
Video Transmission over Wireless Fading Channels
Chen Chi, Yu Zhang, Lele Wang (Tsinghua University, China)

Cross-layer Design for Wireless Video Streaming
Yongjin Cho, C.-C. Jay Kuo (University of Southern California, USA)
Renxiang Huang, Claudio Limb (Sprint Labs, USA)

Social Distance Aware Resource Allocation in Wireless Networks
Vineet Kulkarni, Michael Devetsikiotis (North Carolina State University, USA)

Load Balancing for Flow-based Parallel Processing Systems in CMP Platform
Tingwen Liu, Yong Sun, Zhang Bin, Li Guo
(Chinese Academy of Sciences, China)
TECHNICAL SYMPOSIA PROGRAM • WEDNESDAY

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Sea Pearl Suite 3 – 4

CTS-05: Channel Coding
Chair: Hamid Jafarkhani (University of California, USA)

Coding for a Bit-Shift Channel with Applications to Inductively Coupled Channels
Eirik Rosnes (University of Bergen, Norway)
Angela I. Barbero (University of Valladolid, Spain)
Öyvind Ytrehus (University of Bergen, Norway)

Performance Bounds for Linear Codes in Multi-Rate Superposition Schemes
Uttam Bhat, Dario Fertonani, Tolga M. Dumanci (Arizona State University, USA)

Design and Analysis of Non-binary LDPC and IRA Modulation Codes
Mao-Ching Chiu (National Chung Cheng University, Taiwan)

Spectral Graph Analysis of Quasi-Cyclic Codes
Roxana Smarandache (San Diego State University, USA)
Mark F. Flanagan (University College Dublin, Ireland)

On Asymptotic Ensemble Weight Enumerators of Multi-Edge Type Codes
Chung-Li Wang (University of California, Davis, USA)
Marc Fossorier (ETIS, France)
Shu Lin (University of California, Davis, USA)

A Systematic Reed-Solomon Encoder with Arbitrary Parity Positions
Joschi Brauchle, Ralf Koetter (Technical University of Munich, Germany)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Iolani Suite 1 – 2

ONS-05: Optical Wireless Transmission
Chair: Vincent Chan (Massachusetts Institute of Technology, USA)

Coherent Optical Communication over the Turbulent Atmosphere with Spatial Diversity and Wavefront Predistortion
Andrew Puryear, Vincent Chan (Massachusetts Institute of Technology, USA)

Path Loss Simulation of an Infrared Optical Wireless System for Aircrafts
Svilen Dimitrov, Raed Mesleh (Jacobs University Bremen, Germany)
Harald Haas (University of Edinburgh, UK)

On the Distribution of the Sum of Gamma-Gamma Variates and Application in MIMO Optical Wireless Systems
Nestor D. Chatzidiamantis, George K. Karagiannidis (Aristotle University of Thessaloniki, Greece)

Behavior of Hybrid Optical/RF Channels over Varying Link Distances
Ricardo Luna, Deva K. Borah, Hirshikesh Tapse (New Mexico State University, USA)

Performance Evaluation of an advanced DWDM RoF System for Heterogeneous Wireless
Pham Tien Dat, Abdelmoula Bekkali, Kamugisha Kazaura, Kazuhiro Wakamori, Toshiji Suzuki, Mitsuji Matsumoto (Waseda University, Japan)
Takeshi Higashino, Katsutoshi Tsukamoto, Shojo Komaki (Osaka University, Japan)

Theoretical Analysis of Optical Wireless CDMA with Modified Pseudo Orthogonal M-sequence Sets
Yusuke Kozawa, Hiromasa Habuchi (Ibaraki University, Japan)
Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Coral Ballroom Lounge

SAC(CRN)-09: Cognitive Radio Networks (Poster)
Chair: Mainak Chatterjee (University of Central Florida, USA)

Lp-Norm Spectrum Sensing for Cognitive Radio Networks Impaired by Non-Gaussian Noise
Farzad Moghimi, Amir Nasiri, Robert Schober (University of British Columbia, Canada)

Worst-Case Sensing Deception in Cognitive Radio Networks
Qihang Peng (University of Electronic Science Technology of China, China)
Pamela C. Cosman, Laurence B. Milstein (University of California, San Diego, USA)

Spectrum Sensing by Cognitive Radios at Very Low SNR
Zhi Quan, Stephen J. Shellhammer, Wenyi Zhang (Qualcomm Inc., USA)
Ali H. Sayed (University of California, Los Angeles, USA)

Adaptive Lp-Norm Metric for Secondary BICM-OFDM Systems
Amir Nasiri, Robert Schober (University of British Columbia, Canada)

Exploring Simulated Annealing and Graphical Models for Optimization in Cognitive Wireless Networks
Elena Meshkova, Janne Riijärvi, Andreas Achtzehn, Petri Mähönen (RWTH Aachen University, Germany)

Measurement based Capacity Scavenging viaWhitespace Modeling in Wireless Networks
Anthony Plummer Jr., Mahmoud Taghizadeh, Subir Biswas (Michigan State University, USA)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: Iolani Suite 3 – 4

SPC-05: OFDM and Multi-carrier Systems I
Chairs: Shigeru Shimamoto (Waseda University, Japan)
Hung Nguyen (Aerospace Corporation, USA)

A Gibbs Sampling Based MAP Detection Algorithm for OFDM over Rapidly Varying Mobile Radio Channels
Erdal Panayirci (Princeton University, USA)
Hakan Dogan (Istanbul University, Turkey)
H. Vincent Poor (Princeton University, USA)

Bayesian Cramer-Rao Bound for OFDM Rapidly Time-varying Channel Complex Gains Estimation
Hussein Hijazi, Laurent Ros (Grenoble Image Parole Signal Automatique, France)

Blind Detection of Partial Transmit Sequence in a Coded OFDM System
Koji Shibata, Julian Webber, Toshihiko Nishimura, Takeo Ohgane, Yasutaka Ogawa (Hokkaido University, Japan)

Behavioural Analysis of Internal Mechanism of Nonlinear OFDM Signals
Yiming Lei, Martin D’Oroma (University of Limerick, Ireland)

A Universal Frequency Offset Estimator for OFDM Applications
Ming (Matt) Ruan, Mark C. Reed (NICTA/ANU, Australia)
Zhenning Shi (Alcatel-Lucent, China)

A Hybrid Integer Carrier Frequency Offset Estimator for Practical OFDM Systems
Ming (Matt) Ruan, Mark C. Reed (NICTA/ANU, Australia)
Zhenning Shi (Alcatel-Lucent, China)

Wednesday, 2 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 1

WCS-17: Cooperative Communication: Relay Techniques
Chair: Yuanzhu Peter Chen (Memorial University of Newfoundland, Canada)

A Novel Observe-and-Foward Scheme in Wireless Cooperative Relaying Systems
Wenjun Wu, Qingyi Quan, Yuexing Peng, Kan Zheng, Wenbo Wang (Beijing University of Posts & Telecommunications, China)
Young Il Kim (Electronics and Telecommunications Research Institute, Korea)

The Gaussian Interference Relay Channel with a Potent Relay
Ye Tian, Aylin Yener (Pennsylvania State University, USA)

Dual-Hop Adaptive Packet Transmission with Regenerative Relaying for Wireless TDD Systems
Andreas Mueller (University of Stuttgart, Germany)
Hong-Chuan Yang (University of Victoria, Canada)

Performance of Orthogonal Wireless Relay Networks with Multiple SNR-Thresholds and Multiple Hard-Decision Detections
Dian-Wu Yue, Ha H. Nguyen (University of Saskatchewan, Canada)

Multi-Frame Distributed Protocol for Analog Network Coding in Slow-Fading Channels
Jonathan Gambini, Umberto Spagnolini (Politecnico di Milano, Italy)

Adaptive Modulation and Network Coding with Optimized Precoding in Two-Way Relaying
Toshiaki Koike-Akino (Harvard University, USA)
Petar Popovski (Aalborg University, Denmark)

Vahid Tarokh (Harvard University, USA)
Wednesday, 2 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 2

**WCS-18: MIMO Precoding**
Chair: Xiaodong Lin (University of Ontario, Canada)

A New THP Precoding Scheme with Effective Channel Optimization
Chunlin Yan, Hidetoshi Kayama, Wei Wang, Zhan Zhang
(DOCOMO Beijing Communications Laboratories Co., Ltd, China)

Scale-Only Tomlinson-Harashima Precoding
Kai Xie, Jing Li (Lehigh University, USA)
Xiaowen Wang, Syed Mujtaba (Apple, USA)

Unified Analysis of Linear Block Precoding for Distributed Antenna Systems
Toshiaki Koike-Akino (Harvard University, USA)
Andreas F. Molisch (University of Southern California, USA)
Zhifeng Tao, Philip Orlik (Mitsubishi Electric Research Labs, USA)
Toshiyuki Kuze (Mitsubishi Electric Corporation, Japan)

An Iterative Precoder Optimization Method for K-user Interference Channel Systems
Hakjea Sung, Kyoung-Jae Lee, Seok-Hwan Park, Inkyu Lee
(Korea University, Korea)

Linear Beamforming for Multiuser MIMO Downlink Systems with Channel Orthogonalization
Jim-Sung Kim, Sung-Hyun Moon, Inkyu Lee (Korea University, Korea)

Constellation Precoded Beamforming
Hong Ju Park, Ender Ayanoglu (University of California, Irvine, USA)

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Wednesday, 2 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 3

**WCS-19: OFDMA**
Chair: Jinyun Zhang (Mitsubishi Electric Research Laboratories, USA)

Opportunistic Cell Edge Selection in Multi-cell OFDMA Networks
Chun Kin Au Yeung (Purdue University, USA)
Amine Maaref, Jinyun Zhang (Mitsubishi Electric Research Laboratories, USA)

SC-FDMA versus OFDMA: Sensitivity to Large Carrier Frequency and Timing Offsets on the Uplink
K. Raghunath, A. Ananthanarayanan Chockalingam
(Indian Institute of Science, India)

A Low Complexity Receiver for OFDMA Systems at Downlink
Chia-Horng Liu (Chungwha Telecom Co., Ltd., Taiwan)
BER-based Chunk Allocation in Multiuser OFDM Wireless Systems
Huiling Zhu, Jiangzhou Wang (University of Kent, UK)

Capacity Evaluation of DF Protocols for OFDMA Infrastructure Relay Links
Taneli Ritonen, Risto Wichman, Stefan Werner
(Helsinki University of Technology, Finland)

Diversity-Multiplexing Tradeoff in OFDMA Systems with Coherence Bandwidth Splitting
Bo Bai, Wei Chen, Zhigang Cao (Tsinghua University, China)
Khaled B. Letaief (Hong Kong University of Science & Technology, Hong Kong)

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Wednesday, 2 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 4

**WCS-20: Coding and Modulation**
Chair: Meera Srinivasan
(Jet Propulsion Laboratory, California Institute of Technology, USA)

A Trellis-Coded Modulation Scheme with a Novel Expanded
16-Dimensional Constant Envelope Q2PSK Constellation
Milton I. Quinteros, Edit J. Kaminsky (University of New Orleans, USA)
Kenneth V. Cartwright (College of the Bahamas, Bahamas)

Conflict Resolution by Matrix Reordering for DVB-T2 LDPC Decoders
Cédric Marchand (Universite Europeenne de Bretagne, France)
Jean-Baptiste Dore (NXP Semiconductors, France)
Laura Conde-Canencia, Emmanuel Boutillon
(Universite Europeenne de Bretagne, France)

An MSK Waveform for Radar Applications
Kevin S. Quirk, Meera Srinivasan
(Jet Propulsion Laboratory, California Institute of Technology, USA)

Practical Evaluation of Opportunistic Error Correction
Xiaoying Shao, Cornelis H. Slump (University of Twente, Netherlands)

Efficient Ranking of Rate-Compatible Puncturing Patterns for a Given LDPC Code Matrix
Sissi X. Wu, Wai Ho Mow
(Hong Kong University of Science & Technology, Hong Kong)

Multi-Rate Continuous Phase Modulations for Gaussian Broadcast Channels
Dario Fertonani, Tolga M. Duman (Arizona State University, USA)
**WNS-09: Wireless Network Coding**

**Chair:** Jun Zheng (Southeast University, China)

- **The Benefits of Network Coding over a Wireless Backbone**
  Hui Guo (National Institute of Standards and Technology, USA)
  Yi Qian (University of Nebraska - Lincoln, USA)
  Kejie Lu (University of Puerto Rico, Puerto Rico)
  Nader Moayeri (National Institute of Standards and Technology, USA)

- **Analysis of Opportunistic Scheduling for Wireless Network Coding: Nonidentical Two-User Case**
  Poramate Tarasak, Ubolthip Sethakaset, Sumei Sun
  (Institute for Infocomm Research, Singapore)

- **Opportunistic Network Coding and Dynamic Buffer Allocation in a Wireless Butterfly Network**
  Surachal Chieochan, Ekram Hossain (University of Manitoba, Canada)
  Teerawat Issariyakul (TOT Public Company Limited, Thailand)
  Dusit Nyako (Nanyang Technological University, Singapore)

- **Reliability-based Rate Allocation in Wireless Inter-session Network Coding Systems**
  Keivan Ronasi, A. Hamed Mohsenian-Rad, Vincent W. S. Wong, Sathish Gopalakrishnan, Robert Schober (University of British Columbia, Canada)

- **R-Code: Network Coding based Reliable Broadcast in Wireless Mesh Networks with Unreliable Links**
  Zhengyu Yang, Ming Li, Wenjing Lou (Worcester Polytechnic Institute, USA)

- **Cooperative Peer-to-Peer Information Exchange via Wireless Network Coding**
  Yanfei Fan, Yixin Jiang, Haoqin Zhu, Xuemin (Sherman) Shen
  (University of Waterloo, Canada)

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**WNS-10: 802.16 WiMAX Networks**

**Chair:** Ana Garcia Armada
(University Carlos III de Madrid, Spain)

- **Error Control Strategies for WiMAX Multi-hop Relay Networks**
  Wei-Huang Fu (University of Cincinnati, USA)
  Zhifeng Tao, Jinjun Zhang (Mitsubishi Electric Research Laboratories, USA)
  Dharm P. Agrawal (University of Cincinnati, USA)

- **An Almost Overhead-free Error Control Scheme for IEEE 802.16-based Multi-hop Networks**
  Yue-Ru Chuang (Fu Jen Catholic University, Taiwan)
  Hsueh-Wen Tseng ( Cameo Communications, Inc., Taiwan)
  Shian-Tsung Sheu (National Central University, Taiwan)
  Chih-Wei Su (Institute for Industry Information, Taiwan)

- **Joint Base Station and Relay Station Placement for IEEE 802.16j Networks**
  Hsiao-Chen Lu, Wanjiun Liao (National Taiwan University, Taiwan)

- **System-Level Performance Evaluation of Multi-cell Transparent Mode Relay 802.16j Systems**
  Vasken Genc, Sean Murphy, John Murphy, Abdelhamid Nafaa
  (University College Dublin, Ireland)

- **Quality of Activation (QoA) for Dynamic Service Flows in IEEE 802.16 Networks**
  Isabella Cerutti, Luca Valcareggi, Piero Castoldi
  (Scuola Superiore Sant’Anna, Italy)

- **Providing Quality of Service Guarantees in Multiclass IEEE 802.16e Sleep Mode**
  Georgios Paschos (The Center for Research and Technology Hellas, Greece)
  Petteri Mannarsalo (VTT Technical Research Centre of Finland, Finland)

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**AHSN-16: Cross Layer Optimization**

**Chairs:** Linda Jiang Xie (University of North Carolina, Charlotte, USA)
Sneha Kasera (University of Utah, USA)

- **A Cross-Layer ECN to Achieve Fairness among TCP Flows in Wireless Mesh Networks**
  Jin Ye, Jianxin Wang, Jiawei Huang (Central South University, China)
  Xi Zhang (Texas A&M University, USA)

- **Inter-Gateway Cross-layer Handoffs in Wireless Mesh Networks**
  Wei-Yi Zhao, Jiang Xie (University of North Carolina, Charlotte, USA)

- **Data Acquisition through Joint Compressive Sensing and Principal Component Analysis**
  Riccardo Masiero, Giorgio Quer (University of Padova, Italy)
  Daniele Munaretto (DOCOMO Euro-Labs, Germany)
  Michele Rossi (University of Padova, Italy)
  Joerg Widmer (DOCOMO Euro-Labs, Germany)
  Michele Zorzi (University of Padova, Italy)

- **Joint Configuration of Routing and Medium Access Parameters in Wireless Networks**
  Md. Forkan Uddin, Catherine Rosenberg, Weihua Zhuang
  (University of Waterloo, Canada)
  Andre Girard (Groupe d’Etudes et de Recherche en Analyse des Decisions, Canada)

- **Cross-Layer Modeling of Wireless Ad Hoc Networks in the Presence of Channel Noise**
  Khalid M. J. Khayyat, Fayez Gebali (University of Victoria, Canada)

- **Cross Layer Multirate Adaptation Using Physical Capture**
  Jun Cheol Park, Sneha Kumar Kasera, Neal Patwari (University of Utah, USA)

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**AHSN-17: Quality of Service**

**Chair:** Hamid Sharif (University of Nebraska-Lincoln, USA)

- **MAC Support for Wireless Multimedia Sensor Networks**
  Osama Farrag (Johns Hopkins University Applied Physics Lab, USA)
  Mohamed Younis (University of Maryland Baltimore County, USA)
  William D’Amico (Johns Hopkins University Applied Physics Lab, USA)

  Wei Wang, Dongming Peng, Honggang Wang, Hamid Sharif
  (University of Nebraska-Lincoln, USA)
  Hsiao-Hwa Chen (National Cheng Kung University, Taiwan)

- **QoS-Driven Node Cooperative Resource Allocation for Wireless Mesh Networks with Service Differentiation**
  Ho Ting Cheng, Weihua Zhuang (University of Waterloo, Canada)

- **A Practical Approach for Providing QoS in Multichannel Ad Hoc Networks using Spectrum Width Adaptation**
  Vijay Raman, Matthew Caesar (University of Illinois, Urbana-Champaign, USA)

- **Optimum Allocation of Energy and Spectrum in Power-Controlled Wireless Networks with QoS Constraints Steplan Kucera (NICT Keihanna, Japan)**
  Ludek Kucera (Charles University, Czech Republic)
  Bing Zhang (NICT Keihanna, Japan)

- **Distributed Optimal Relay Selection for QoS Provisioning in Wireless Multi-hop Cooperative Networks**
  Yilei Wei (Carleton University, Canada)
  Mei Song (Beijing University of Posts and Telecommunications, China)
  F. Richard Yu (Carleton University, Canada)
  Yong Zhang, Junde Song
  (Beijing University of Posts & Telecommunications, China)
Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Iolani Suite 5 – 6

CISS-06: Denial of Service
Chair: Hongmei Deng (Intelligent Automation Inc., USA)

Accountable File Indexing against DDoS Attacks in Peer-to-Peer Networks
Xiaosong Lou, Kai Hwang (University of Southern California, USA)
Yue Hu (University of Science and Technology, China)

Protecting SIP against Very Large Flooding DoS Attacks
Felipe Huici, Saverio Niccolini, Nico d’Heureuse (NEC Europe Ltd., Germany)

Detection of DDoS Traffic by using the Technical Analysis used in the Stock Market
Junghoon Yun, Song Chong
(Korea Advanced Institute of Science and Technology, Korea)

RateGuard: A Robust Distributed Denial of Service (DDoS) Defense System
Huizhong Sun, Wenchao Ngn, H. Jonathan Chao
(Polytechnic Institute of New York University, USA)

Stealthy IP Prefix Hijacking: Don’t Bite Off More Than You Can Chew
Christian McArthur (Texas A&M University, USA)
Mina Guirguis (Texas State University, USA)

NSF: Network-based Spam Filtering based on On-line Blacklisting against Spammer Botnets
Byungseung Kim (Samsung Electronics Co., Ltd., Korea)
Hyagon Kim (Korea University, Korea)
Saewoong Bahk (Seoul National University, Korea)

Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Kahili Suite 2

CQPRM-08: Quality and Performance of Networks and Services
Chair: Tetuya Yokotani (Mitsubishi Electric Corporation, Japan)

Parameter Setting and 2-D Stability Conditions for TCP/RED Networks
Seok Woo, Kiseon Kim (Gwangju Institute of Science and Technology, Korea)
Lei Wang, Yang Xiao (Beijing Jiaotong University, China)

Fair Queueing based Packet Scheduling for Buffered Crossbar Switches
Deng Pan, Xia Makki, Niki Pissinou (Florida International University, USA)

Fair and Efficient Dynamic Traffic Grooming Algorithm for WDM Mesh Networks
Andre Drummond, Nelson L. S. de Fonseca
(State University of Campinas, Brazil)

Fast Admission Control for Short TCP Flows
Yongxin Jiang, Aaron Striegel (University of Notre Dame, USA)

Reliable Transmission in Flow-Aware Networks
Jerzy Domzal, Robert Wójcik, Andrzej Jajszczyk
(AGH University of Science and Technology in Krakow, Poland)

A Reinforcement Learning-Based Lightpath Establishment for Service Differentiation in All-Optical WDM Networks
Izumi Koyanagi, Takui Tachibana, Kenji Sugimoto
(Nara Institute of Science and Technology, Japan)
Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Sea Pearl Suite 3 – 4

CTS-06: Joint Source-Channel Coding and Compressive Sensing
Chair: Daniel J. Costello (University of Notre Dame, USA)

Asymptotically Optimal Joint Source-Channel Coding with Minimal Delay
Marius Kleiner, Bixio Rimaldi (Ecole Polytechnique Federale de Lausanne, Switzerland)

Multi-Functional Compression with Side Information
Soheil Feizi, Muriel Medard (Massachusetts Institute of Technology, USA)

Secure Joint Source-Channel Coding for Quasi-Static Fading Channels
Tony Q. S. Quek (Institute for Infocomm Research, Singapore)
Kiran Thimme Gowda (Institut Eurecom, France)
Hyundong Shin (Kyung Hee University, Korea)

On Reducing the Complexity of Tone-Reservation Based PAPR Reduction Schemes by Compressive Sensing
Ebrahim B. Al-Safadi, Tareq Y. Al-Naffouri (King Fahd University of Petroleum & Minerals, Saudi Arabia)

Design and Analysis of Synchronizable Error-Resilient Arithmetic Codes
Hiroyoshi Morita (University of Electro-Communications, Japan)
Ying Zou (Hitachi Software Engineering, Japan)
J. van Wijngaarden (Bell Laboratories, Alcatel-Lucent, USA)

Receiver only Optimized Semi-Hard Decision VQ for Noisy Channels
Thiagaran Ganesan, Chandra R. Murthy (Indian Institute of Science, India)

Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Seaport Suite 1 – 2

ONS-06: Switching and Network Access
Chair: George N. Rouskas (North Carolina State University, USA)

Secure Degrees of Freedom for Gaussian Channels with Interference: Structured Codes Outperform Gaussian Signaling
Xiang He, Aylin Yener (Pennsylvania State University, USA)

Degrees of Freedom on the K-User MIMO Interference Channel with Constant Channel Coefficients for Downlink Communications
Namyoum Lee, Dohyung Park, Young-Doo Kim (Samsung Advanced Institute of Technology, Korea)

On the Optimality of Beamforming for Multi-User MISO Interference Channels with Single-User Detection
Xiaohu Zhang (Princeton University, USA)
Biao Chen (Syracuse University, USA)
H. Vincent Poor (Princeton University, USA)

Communicating Correlated Gaussian Sources over Gaussian Interference Channels
Wei Liu, Biao Chen (Syracuse University, USA)

A Two-stage Precoding Method based on Interference Alignment for Interference Channel Systems
Hakjea Sung, Seok-Hwan Park, Kyoung-Jae Lee, Inkyu Lee (Korea University, Korea)

How to Position n Transmitter-Receiver Pairs in n-1 Dimensions such that Each Can Use Half of the Channel with Zero Interference from the Others
Rudolf Mathar, Milan Zivkovic (RWTH Aachen, Germany)
IEEE GLOBECOM 2009
Ride the Wave to Global Connectivity

TECHNICAL SYMPOSIA PROGRAM • WEDNESDAY

Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Iolani Suite 3 – 4

SPC-06: OFDM and Multi-carrier Systems II
Chairs: Hai Lin (Osaka Prefecture University, Japan)
         Hsiao-Chun Wu (Louisiana State University, USA)

Dual Transform Domain Echo Canceller for Discrete Multitone Systems
Neda Ehtiati, Benoit Champagne (McGill University, Canada)

Efficient Pilot-Aided Digital Baseband Compensation of Phase Noise ICI in
OFDM Receivers
Payam Rabiei, Won Namgoong, Naofal Al-Dhahir
(University of Texas, Dallas, USA)

Compensation of the Impact of Interference Mitigation by Pulse Blanking in
OFDM Systems
Sinja Brandes, Ulrich Epiple, Michael Schnell
(German Aerospace Center, Germany)

IBI Cancellation Based on Limited Channel Feedback for OFDM Systems
over Channels with Large Delay Spreads
Xia Wang (Xi’an Jiaotong University, China)
Geoffrey Ye Li (Georgia Institute of Technology, USA)
Hongjie Hu, Long Qin, Anthony Soong (Huawei Technologies, USA)

Intercarrier Interference Immune Single Carrier OFDM via Magnitude Shift
Keying Modulation
Xue Li, Ruolin Zhou (Wright State University, USA)
Vasu Chakravarthy (Air Force Research Laboratory, USA)
Zhiqiang Wu (Wright State University, USA)

Construction of M-QAM Sequences Based on Generalized Rudin-Shapiro
Polynomials
Yajun Wang, Wen Chen, Wei Chen (Shanghai Jiaotong University, China)

Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Sea Pearl Suite 1 – 2

SAC(CRN)-06: MAC/Routing in Cognitive Radio Networks
Chair: Prathima Agrawal (Auburn University, USA)

Time Synchronization of Cognitive Radio Networks
Jari Nieminen (Helsinki University of Technology, Finland)
Lijun Qian (Prairie View A&M University, USA)
Riku Jantti (Helsinki University of Technology, Finland)

Optimal Route Selection and Resource Allocation in Multi-hop Cognitive Radio Networks
Qianxi Lu, Tao Peng, Wei Wang, Wenbo Wang, Chao Hu
(University of Posts and Telecommunications, China)

A Probabilistic Approach to Identifying the Number of Frequency Hoppers for Spectrum Sensing
Yuxing Han, Shaunak Joshi (University of California, Los Angeles, USA)
Lillian Dai (Cisco, USA)
Danijela Cabric (University of California, Los Angeles, USA)
Sateesh Addepalli (Cisco, USA)
Jiangtao Wen (Tsinghua University, China)
John Villasenor (University of California, Los Angeles, USA)

Simple and Efficient MAC for Cognitive Wireless Personal Area Networks
Jelena Misic, Vojislav Masic (Ryerson University, Canada)

Spectrum-Aware Routing Protocol for Cognitive Ad Hoc Networks
Suyang Ju, Joseph B. Evans (University of Kansas, USA)

Medium Access Control Signaling for Reliable Spectrum Agile Radios
Ehsan Azarnasab, Rong-Rong Chen (University of Utah, USA)
Koon Hoo Teo, Zhifeng Tao (Mitsubishi Electric Research Laboratories, USA)
Behrouz Farhang-Boroujeny (University of Utah, USA)

Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Honolulu Suite 3

SAC(ET)-01: Ethernet PON and Wireless Access Networks
Chair: Marco Chiani (University of Bologna, Italy)

A Nonlinear-Predictive QoS-Promoted Dynamic Bandwidth Allocation Scheme for Triple-play Services in Ethernet Passive Optical Networks
Jan-Wen Peng (Chunghua Telecom Laboratories, Taiwan)
Chung-Ju Chang, Po-Ling Tien (National Chiao Tung University, Taiwan)

Sleep and Adaptive Link Rate Control for Power Saving in 10G-EPON Systems
Ryogo Kubo, Jun-iichi Kani, Yukihiko Fujimoto, Naoto Yoshimoto, Kyomichi Nakosaka (NTT, Japan)

MPCP Assisted Power Control and Performance of Cell Breathing in Integrated EPON-WiMAX Network
Shing-Wa Wong (Stanford University, USA)
Ying Yan (Technical University of Denmark, USA)
Leonid Kazovsky (Stanford University, USA)
Lars Dittmann (Technical University of Denmark, Denmark)

Integrated Approach to Proportional-fair Resource Allocation for Multiclass Services in an OFDMA System
Nararat Ruangchajutaporn (Graduate University for Advanced Studies, Japan)
Yusheng Ji (National Institute of Informatics, Japan)

Scalable Peer-to-Peer Video Streaming in WiMAX Networks
Muhammad Aman, Biplab Sikdar (Rensselaer Polytechnic Institute, USA)
Shyam Parekh (Alcatel-Lucent, USA)

Scalable Video Multicast on Broadcast Channels
Jun Xu (Shanghai Jiao Tong University, China)
Raju Hormis (Analog Devices, USA)
Xiaodong Wang (Columbia University, USA)
Wednesday, 2 December 2009 • 16:30 – 18:30
Location: South Pacific Ballroom 1
WCS-21: Cooperative Communication: Power and Resource Allocation
Chair: Yonghui Li (University of Sydney, Australia)
- Distributed Relay-Source Assignment for Cooperative Wireless Networks Using Two-sided Market Games
  - Dapeng Li, Jing Liu, Youyun Xu, Xingbing Wang, Wen Chen
  (Shanghai Jiaotong University, China)
- On the Optimal Power Control of Parallel OFDM Relaying Networks
  - Yingnan Zhang, Qiao Wang (Southeast University, China)
- Relaying Power Allocation with User-Cooperation for OFDM-based MISO Broadcast Channels
  - Hyukjoon Kwon, Hui Won Je, John M. Cioffi (Stanford University, USA)
- Joint Optimization of Power Allocation and Relay Location for Decode-and-Forward Dual-Hop Systems over Nakagami-m Fading Channels
  - Salama S. Ikki, Murat Uysal (University of Waterloo, Canada)
  - Mohamed H. Ahmed (Memorial University, Canada)
- Power and Location Optimization for Decode-and-forward Opportunistic Cooperative Networks
  - Changqing Yang, Wenbo Wang, Shuang Zhao, Muge Peng
  (Beijing University of Posts & Telecommunications, China)
- Joint Source Power Scheduling and Distributed Relay Beamforming in Multiuser Cooperative Wireless Networks
  - Xin Li, Yimin Zhang, Moeness G. Amin (Villanova University, USA)

Wednesday, 2 December 2009 • 16:30 – 18:30
Location: South Pacific Ballroom 2
WCS-22: UWB
Chair: Lutz Lampe (University of British Columbia, Canada)
- Performance Analysis of a Multiband OFDM UWB System in the Presence of Narrowband Interference
  - Francisco C. B. F. Muller, Aldo Barlaouta
  (Universidade Federal do Para, Brazil)
  - Claudio R. C. da Silva (Virginia Polytechnic Institute / State University, USA)
- An Ultra-Wideband Impulse-Radio Communication Method and Transceiver
  - Emil Novakov, Jean-Michel Fournier
  (Institut de Microélectronique, Electromagnétisme et Photonique, France)
- Compressed Sensing Reception of Bursty UWB Impulse Radio is Robust to Narrow-band Interference
  - Anand Oka, Lutz Lampe (University of British Columbia, Canada)
- Effects of Time Variant Channel on a Time Reversal UWB System
  - Ijaz Haider Naqvi, Philippe Besnier, Ghaïs El Zein
  (Institute of Electronics and Telecommunications of Rennes, France)
- On the Use of Multipart Geometry for Wideband Cooperative Localization
  - Yuan Shen, Moe Z. Win (Massachusetts Institute of Technology, USA)
- Nonparametric Obstruction Detection for UWB Localization
  - Stefano Marano (ETH Zurich, Switzerland)
  - Wesley M. Gifford, Henk Wymeersch, Moe Z. Win
  (Massachusetts Institute of Technology, USA)

Wednesday, 2 December 2009 • 16:30 – 18:30
Location: South Pacific Ballroom 3
WCS-23: Fading Channels
Chair: Youjian (Eugene) Liu (University of Colorado, Boulder, USA)
- On the Use of High-Order Moment Matching to Approximate the Generalized-K Distribution by a Gamma Distribution
  - Saad Al-Ahmad, Halim Yanikomeroglu (Carleton University, Canada)
- Numerical Computation of the Lognormal Sum Distribution
  - Damith Senaratne, Chintia Tellambura (University of Alberta, Canada)
- Fitting the Modified–Power–Lognormal to the Sum of Independent Lognormals Distribution
  - Sebastian S. Szyszkowski, Halim Yanikomeroglu (Carleton University, Canada)
- Carrier to Interference Ratio Analysis for the Shotgun Cellular System
  - Prasanna Madhusudhanan, Juan R. Restrepo, Youjian (Eugene) Liu
  - Timothy X. Brown (University of Colorado, USA)
- The $\eta - \lambda - \mu$: A General Fading Distribution
  - Anastasios K. Papazafeiropoulos, Stavros K. Kotsopoulos
  (University of Patras, Greece)
- Constellation Subset Selection: Theories and Algorithms
  - Hsiao-Chun Wu (Louisiana State University, USA)
  - Shih Yu Chang (National Tsing Hua University of Taiwan, Taiwan)
Wednesday, 2 December 2009 • 16:30 – 18:30
Location: Coral Ballroom 1

WNS-11: Game Theory in Wireless Networks
Chair: Floriano De Rango (University of Calabria, Italy)

An Interference Minimization Game Theoretic Subcarrier Allocation
Quang Duy La (Nanyang Technological University, Singapore)
Yong Huat Chew (Institute for Infocomm Research, Singapore)
Boon Hee Soong (Nanyang Technological University, Singapore)

QoS-Driven Power-Allocation Game over Fading Multiple-Access Channels
Qinghe Du, Xi Zhang (Texas A&M University, USA)

Radio-Aware Scheduler for WiMAX Systems based on Time-Utility Function and Game Theory
Rosario G. Garroppo, Stefano Giordano, Davide Iacono
(University of Pisa, Italy)

Mitigating Self-interference among IEEE 802.22 Networks: A Game Theoretic Perspective
Swastik Brahma, Mainak Chatterjee (University of Central Florida, USA)

Resource Pricing with Primary Service Guarantee in Cognitive Radio Networks: A Stackelberg Game Approach
Yun Li, Xinbing Wang (Shanghai Jiaotong University, China)
Mohsen Guizani (Western Michigan University, USA)

Revenue Maximizing Game and its Extention for Multicell Wireless Access Networks
Sewoon Jang, Sung-Guk Yoon, Saewoong Bahk
(Seoul National University, Korea)
Thursday, 3 December 2009 • 10:15 – 12:15
Location: Honolulu Suite 2

**AHSN-19: Localization I**
Chair: Richard Martin (Rutgers University, USA)

**A Novel Non-iterative Localization Solution**
Junlin Yan, Christian C. J. Tiberius, Giovanni Belluscio, Gerard J. M. Janssen (Delft University of Technology, Netherlands)

**Lightweight Object Localization with a Single Camera in Wireless Multimedia Sensor Networks**
Hakan Ozтарak (Middle East Technical University, Turkey)
Kemal Akkaya (Southern Illinois University Carbondale, USA)
Adnan Yazici (Middle East Technical University, Turkey)

**Bias-Correction in Localization Algorithms**
Yiming Ji, Changbin Yu, Brian D. O. Anderson (Australian National University, Australia)

**Sequential Greedy Localization in Wireless Sensor Networks with Inaccurate Anchor Positions**
Qingjiang Shi, Chen He (Shanghai Jiao Tong University, China)
Hongyang Chen (University of Tokyo, Japan)
Lingge Jiang, Wei Wang (Shanghai Jiao Tong University, China)

**Restarting Particle Filters: an Approach to Improve the Performance of Dynamic Indoor Localization**
Begumhan Turgut, Richard Martin (Rutgers University, USA)

**Understanding and Solving Flip-Ambiguity in Network Localization via Semidefinite Programming**
Stefano Severi (University of Bologna, Italy)
Giuseppe de Abreu, Giuseppe Destino (University of Oulu, Finland)
Davide Dardari (University of Bologna, Italy)
Thursday, 3 December 2009 • 10:15 – 12:15
Location: Coral Ballroom Lounge

CTS-08: Low Density Parity Check Codes
Chair: Adriaan J. van Wijngaarden (Bell Laboratories, USA)

Growth Rate of the Weight Distribution of Doubly-Generalized LDPC Codes: General Case and Efficient Evaluation
Mark Flanagan (University College Dublin, Ireland)
Enrico Paolini, Marco Chiani (University of Bologna, Italy)
Marc Fossorier (ETIS ENSEA, France)

Ensemble Pseudocodeword Weight Enumerators for Protograph-Based Generalized LDPC Codes
Shadi Abu-Surra (University of Arizona, USA)
Darish Divsalar (Jet Propulsion Laboratory, USA)
William E. Ryan (University of Arizona, USA)

Sparsely Decoding of Low Density Parity Check Codes Using Margin Propagation
Ming Gu, Kian Misra, Hayder Radha, Shantanu Chakrabarty (Michigan State University, USA)

Pivoting Algorithms for Maximum Likelihood Decoding of LDPC Codes over Erasure Channels
Gianluigi Liva, Balazs Matuz (German Aerospace Centre, Germany)
Enrico Paolini, Marco Chiani (University of Bologna, Italy)

Undetected Errors in Quasi-cyclic LDPC Codes Caused by Receiver Symbol Slips
Alexander Kaiser (University of California, Berkeley, USA)
Sam Dolinar, Michael K. Cheng (Jet Propulsion Laboratory, USA)

A Relaxed Half-Stochastic Iterative Decoder for LDPC Codes
François Leduc-Primeau, Saied Hemati, Warren J. Gross, Shie Mannor (McGill University, Canada)

Thursday, 3 December 2009 • 10:15 – 12:15
Location: Sea Pearl Suite 5 – 6

CTS-09: Interference and Relay Networks
Chair: Rui Zhang (Institute of InfoComm Research, Singapore)

Capacity Outer Bounds for the Cognitive Z Channel
Yi Cao, Biao Chen (Syracuse University, USA)

Coverage in Tiered Cellular Networks with Spatial Diversity
Vikram Chandrasekhar (Texas Instruments, USA)
Marios Kountouris (SUPELEC, France)
Jeffrey G. Andrews (University of Texas, Austin, USA)

Delay-Throughput Tradeoff for Supportive Two-Tier Networks: A Static Primary Tier vs. a Mobile Secondary Tier
Long Gao (Texas A&M University, USA)
Rui Zhang (Institute of InfoComm Research, Singapore)
Shuguang Cui (Texas A&M University, USA)

Optimal Scheduling in Interference Limited Fading Wireless Networks
Sastry Kompella (Naval Research Laboratory, USA)
Hanif Sherali (Virginia Polytechnic Institute and State University, USA)
Anthony Ephremides (University of Maryland at College Park, USA)

Coding Strategies for Bidirectional Relaying for Arbitrarily Varying Channels
Rafael F. Wyrembelski, Igor Bjelakovic, Holger Boche (Technical University of Berlin, Germany)

Diversity and Multiplexing of Opportunistic Shared Relay Channel and the X-Relay Channel
Mohamed Abouelseoud, Aria Nosratinia (University of Texas, Dallas, USA)
<table>
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<tr>
<th>Location: Iolani Suite 1 – 2</th>
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<tbody>
<tr>
<td><strong>ONS-07: Traffic Grooming and Network Design</strong></td>
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<tr>
<td><strong>Chair: Xiaojun Cao</strong> (Georgia State University, USA)</td>
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</table>

**Distributed Grooming in Multi-Domain IP/MPLS-DWDM Networks**  
Qing Liu (Oak Ridge National Laboratory, USA)  
Tannous Frangieh (Virginia Polytechnic Institute and State University, USA)  
Feng Xu, Chongyang Xie, Nasir Ghani (University of New Mexico, USA)  
Ashwin Gumaste (Indian Institute of Technology Bombay, India)  
Tom Lehman (University of Southern California, USA)  
Chin Guok (ESnet, USA)  
Scott Klasky (Oak Ridge National Laboratory, USA)  

**Design and Provisioning of WDM Networks for Many-to-Many Traffic Grooming**  
Mohammad A. Saleh, Ahmed E. Kamal (Iowa State University, USA)  

**REPARe: Regenerator Placement and Routing Establishment in Translucent Networks**  
Weiyi Zhang (North Dakota State University, USA)  
Jian Tang (Montana State University, USA)  
Kendall Nygard (North Dakota State University, USA)  
Chonggang Wang (NEC Laboratories America, USA)  

**Non-uniform Waveband Switching in Multi-granular Optical Networks**  
Yang Wang, Xiaojun Cao (Georgia State University, USA)  

**On the Efficiency of a Game Theoretic Approach to Sparse Regenerator Placement in WDM Networks**  
Diego Lucerna, Nicola Gatti, Guido Maier, Achille Pattavina (Politecnico di Milano, Italy)  

**Power Efficient Traffic Grooming in Optical WDM Networks**  
Emre Yetginer (Bilkent University, Turkey)  
George N. Rouskas (North Carolina State University, USA)  

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<td><strong>SAC(CR)-07: Cooperation in Cognitive Radio Networks I</strong></td>
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<td><strong>Chair: Saeed Ghassemzadeh</strong> (AT&amp;T Labs - Research, USA)</td>
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**Cooperative Spectrum Sensing Using Free Probability Theory**  
Lei Wang, Baoyu Zheng, Jingwu Cui, Sulan Tang (Nanjing University of Posts and Telecom, China)  
Haie Dou (Southeast University, China)  

**Efficient Cooperative Spectrum Sensing in Cognitive Radio**  
Dan Wang, Ahmed Tewfik (University of Minnesota, USA)  

**Collaborative Quickest Spectrum Sensing Via Random Broadcast in Cognitive Radio Systems**  
Husheng Li (University of Tennessee, USA)  
Huaiyu Dai, Chengzhi Li (North Carolina State University, USA)  

**Information Sharing in Spectrum Auction for Dynamic Spectrum Access**  
Hui Yu, Lin Gao, Yun Li, Xiaoying Gan, Xinbing Wang, Youyun Xu, Wen Chen (Shanghai Jiaotong University, China)  
Althanasios Vasilakos (University of Western Macedonia, Greece)  

**Spectrum Self-coexistence in Cognitive Wireless Access Networks**  
Tao Chen (VTT, Finland)  
Honggang Zhang (Zhejiang University, China)  
Marko Höyhtyä, Marcos D. Katz (VTT, Finland)  

**Measurement based Capacity Scavenging via WhiteSpace Modeling in Wireless Networks**  
Anthony Plummer, Jr., Mahmoud Taghizadeh, Subir Miswai (Michigan State University, USA)  

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Hung Nguyen (The Aerospace Corporation, USA) |

**Signal Estimation in Clutter Using SVM-based Chaos Synchronization**  
Di He (Shanghai Jiao Tong University, China)  

**Low-Complexity Near-Optimal Presence Detector for Linearly Modulated Signals**  
Jeong Ho Yeo, Joon Ho Cho (Pohang University of Science and Technology, Korea)  

**On-line Hybrid Cramér-Rao Bound for Oversampled Dynamical Phase and Frequency Offset Estimation**  
Jordi Vilà Valls, Jean-Marc Brossier, Laurent Ros (Grenoble Institute of Technology, France)  

**Near-ML Detection over a Reduced Dimension Hypersphere**  
Jun Won Choi (University of Illinois, Urbana-Champaign, USA)  
Byonghyo Shim (Korea University, Korea)  
Andrew Singer (University of Illinois, Urbana-Champaign, USA)  

**IDMA vs. CDMA: Detectors, Performance and Complexity**  
Katsutoshi Kusume, Gerhard Bauch (DOCOMO Euro-Labs, Germany)  
Wolfgang Utschick (Technische Universität München, Germany)  

**Jamming Mitigation Techniques based on Message-Driven Frequency Hopping**  
Lei Zhang, Jian Ren, Tongtong Li (Michigan State University, USA)  

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<td><strong>Chair: Lutz Lampe</strong> (University of British Columbia, Canada)</td>
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**A Unified Structure for Multi-Carrier Modulations in Power-Line Communications**  
Hao Lin, Pierre Siohsan (France Telecom, France)  

**An Adaptive Procedure for Impulsive Noise Mitigation over Power Line Channels**  
Gaetan Ndo, Pierre Siohsan, Marie-Helene Hamon (France Telecom, France)  

**Inter-packet Channel Estimation in OFDM Systems**  
Gabriele Dell’Amico, Eleonora Guerrini, Raffaele Riva (STMicroelectronics S.r.l., Italy)  

**Joint Channel and Echo Impulse Response Shortening for High-Speed Data Transmission**  
Ali Enteshari, Jari M. Fadlullah, Moshen Kavehraz (Pennsylvania State University, University Park, USA)  

**A Novel Time Domain Synchronous Orthogonal Frequency Division Multiple Access Scheme**  
Linglong Dai, Jian Fu, Jun Wang, Jian Song, Zhixing Yang (Tsinghua University, China)  

**Advanced Wireless IP Access System (WIPAS) for Higher Speed and Real-Time Communication Services**  
Kiyohiko Itoikawa, Toru Nishikawa, Akira Matsushita, Mitsuuru Nishino, Yasunari Takahata, Yoshishiki Shindo (NTT, Japan)
Thursday, 3 December 2009 • 10:15 – 12:15
Location: Coral Ballroom Lounge

SPC-14: Signal Processing for Communications II (Poster)

Chairs: Tomoaki Ohtsuki (Keio University, Japan)
Hung Nguyen (The Aerospace Corporation, USA)

Soft-decode-and-forward for Asynchronous Wireless Network with Doubly-selective Fading
Jingxian Wu (University of Arkansas, USA)

Distributed Null-Steering Beamforming for Wireless Sensor Networks
Keyvan Zarifi, Sofiene Affes (University of Quebec, Canada)
Ali Ghrayeb (Concordia University, Canada)

Joint Power Allocation and Relay Selection in Cooperative Networks
Khoa T. Phan (University of California, Los Angeles, USA)
Duy H. Nguyen, Tho Le-Ngoc (McGill University, Canada)

Optimized Spreading Code Reallocation Technique for PAPR Reduction in MC-CDMA systems
Lin Yang, Mingli You, Jun Li (Alcatel Lucent Shanghai Bell, China)

Optimized Architecture for Computing Zadoff-Chu Sequences with Application to LTE
Mohammad M. Mansour (American University of Beirut, Lebanon)

SSCT: A Simple Sequential Spectrum Sensing Scheme for Cognitive Radio
Yan Xin, Honghai Zhang, Sampath Rangarajan (NEC Labs America, USA)

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WCS-25: Cooperative Communication: Distributed Modulation and Coding

Chair: Sami Mu habitual (Simon Fraser University, Canada)

Cooperative Transmission with Continuous Phase Frequency Shift Keying and Phase-Forward Relays
Qi Yang, Paul Ho (Simon Fraser University, Canada)

Energy-Efficient Space-Time Coded Cooperative Routing in Multihop Wireless Networks
Behrouz Maham (University of Oslo, Norway)
Ravi Narasimhan (Quantenna Communications, USA)
Are Hjørungn (University of Oslo, Norway)

Design of Signal Constellation Rearrangement (CoRe) for Multiple Relay Links
Jinwoo Kim (Korea University, South Korea)
Hee S. Lee, Jae Y. Ahn (ETRI, South Korea)
Chung G. Kang (Korea University, South Korea)

Design of Distributed Space-Time Block Code for Two-Relay System over Frequency Selective Fading Channels
Quoc-Tuan Vien, Le-Nam Tran, Een-Kee Hong (Kyuong Hee University, Korea)

Iteratively Suboptimum Decoder Design for Distributed Space-Time Coding Based on Distributed Interleavers
Yier Yan, Xueqin Jiang, Moon Ho Lee (Chonbuk University, Korea)

Successful Relaying Aided Near-Capacity Irregular Distributed Space-Time Coding
Lingkun Kong, Soon Xin Ng, Robert G. Mauder, Lajos Hanzo (University of Southampton, UK)

Thursday, 3 December 2009 • 10:15 – 12:15
Location: South Pacific Ballroom 2

WCS-26: Cognitive Radio

Chair: Chonggang Wang (NEC Laboratories America, USA)

Bandpass Sampling Digital Frontend Architecture for Multi-band Access Cognitive Radio
Jae Hyung Kim, Hongmei Wang (Changwon National University, Korea)
Hyung-Jung Kim, Jin-Up Kim (Electronics and Telecommunications Research Institute, Korea)

Cooperative Spectrum Sensing over Correlated Log-Normal Sensing and Reporting Channels
Marco Di Renzo (University of Edinburgh, UK)
Laura Imbriglia, Fabio Gagliardi, Fortunato Santucci (University of I'Aquila, Italy)

Cooperative Spectrum Sensing with Dynamic Threshold Adaptation
Dae-Young Seol, Hyoung-Jin Lim, Gi-Hong Im (Pohang University of Science and Technology, Korea)

Quality-of-Service in Cognitive Radio Networks with Collaborative Sensing
Caoxie Zhang, Xinbing Wang, Xinping Guan (Shanghai Jiao Tong University, China)
Hsiao-Hwa Chen (National Cheng Kung University, Taiwan)

A Distributed Beamforming Approach for Enhanced Opportunistic Spectrum Access in Cognitive Radios
Jian Liu, Wei Chen, Zhigang Cao (Tsinghua University, China)
Yingjun (Angela) Zhang (Chinese University of Hong Kong, Hong Kong)

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WCS-27: MIMO-OFDM

Chair: Guosen Yue (NEC Laboratories America, Inc., USA)

Multilayer Space-Time-Frequency Coding Scheme for MIMO-OFDM
Guosen Yue (NEC Laboratories America, Inc., USA)
Li Zhang (University of California, Davis, USA)
Xiaodong Wang (Columbia University, USA)

A Virtual Layered Space-Frequency Communication Architecture with Iterative Decoding
Jun Imamura, Satoshi Denno, Daisuke Umehara, Masahiro Morikura (Kyoto University, Japan)

Low-Complexity Algorithm for Log Likelihood Ratios in Coded MIMO-OFDM Communications
Liming Zheng, Joojin Woo, Kazuhiro Fukawa, Hiroshi Suzuki (Tokyo Institute of Technology, Japan)

Bit-Interleaved Coded Transmission with Multilevel Modulation for MIMO-OFDM Systems
Chan-Ho Choi, Gi-Hong Im (Pohang University of Science and Technology, Korea)

Iterative Receiver Design with Joint Channel Estimation and Synchronization for Coded MIMO-OFDM over Doubly Selective Channels
Hung Nguyen-Le, Tho Le-Ngoc, Nghi H. Tran (McGill University, Canada)

Slepian-Based Serial Estimation of Time-Frequency Variant Channels for MIMO-OFDM Systems
Pierluigi Salvo Rossi (Second University of Naples, Italy)
Ralf Müller (Norwegian University of Science and Technology, Norway)
Ove Edfors (Lund University, Sweden)
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WNS-13: Vehicular Ad Hoc Networks
Chair: Soumaya Cherkaoui (University of Sherbrooke, Canada)

Detection of Radio Interference Attacks in VANET
Ali Hamieh, Jalel Ben-othman, (University of Versailles, France)
Lynda Mokdad (University of Paris 12, France)

Competitive Wireless Access for Data Streaming Over Vehicle-to-Roadside Communications
Dusit Niyato (Nanyang Technological University, Singapore)
Ekram Hossain (University of Manitoba, Canada)
Ping Wang (Nanyang Technological University, Singapore)

On a Stochastic Delay Bound for Disrupted Vehicle-to-Infrastructure Communication with Random Traffic
Atef Abd Rabou, WeiHua Zang (University of Waterloo, Canada)

A New Hierarchical and Adaptive Protocol for Minimum-Delay V2V Communication
Mohammed Elbes, Alaa Al-Fuqaha, Mohsen Guizani (Western Michigan University, USA)
Ammar Rayes (Cisco Systems, USA)
Jun Oh (Western Michigan University, USA)

A Multicast Routing Protocol in Vehicular Ad Hoc Networks
Yuh-Shyan Chen (National Taiwan University, Taiwan)
Yun-Wei Lin, SingLing Lee (National Chung Cheng University, Taiwan)

 Provisioning of On-demand Services in Vehicular Networks
Etienne Coronado, Soumaya Cherkaoui (University of Sherbrooke, Canada)

WNS-28: Power Control
Chair: Norman C. Beaulieu (University of Alberta, Canada)

Dynamic Power Allocation over Block-Fading Channels with Delay Constraint
Ali Sharifkhani, Norman C. Beaulieu (University of Alberta, Canada)

Three-Degree of Freedom Adaptive Power Control for CDMA Cellular Systems
J. C. Agüero, G. C. Goodwin, K. Lau, M. Wang
(University of Newcastle, Australia)
E. I. Silva (Universidad Tecnica Federico Santa Maria, Chile)
T. Wigren (Ericsson AB, Sweden)

Tradeoff Power Control for Cellular Systems
Changho Suh (University of California, Berkeley, USA)
Ali Koc, Shilpa Talwar (Intel, USA)

Distributed Power Control in Femtocell-Underlay Cellular Networks
Vikram Chandrasekhar (Texas Instruments, USA)
Jeffrey G. Andrews (University of Texas, Austin, USA)
Zukang Shen (Datang Mobile Telecommunications Equipment Co. Ltd., USA)
Tarik Muharemovic, Alan Gatherer (Texas Instruments, USA)

Conjectural Equilibrium in Water-filling Games
Yi Su, Mihaela van der Schaar (University of California, Los Angeles, USA)

Analysis and Efficient Computation of Instantaneous Power Distribution of Single-Carrier Signals
Makoto Tanahashi, Hideki Ochiai (Yokohama National University, Japan)
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**AHSN-20: Localization II**

Chair: R. Michael Buehrer
(Virginia Polytechnic Institute / State University, USA)

- **Effect of Pivot Nodes Selection Schemes on Self-Localization Performance in a Mobile Sensor Network**
  Shinsuke Hara, Tatsuya Ishimoto (Osaka City University, Japan)

- **Error Propagation in Sensor Network Localization with Regular Topologies**
  Baoqi Huang, Changbin Yu, Brian D. O. Anderson
  (Australian National University, Australia)

- **An Optimization Approach to Single-Source Localization using Direction and Range Estimates**
  Jesse D. Reed, R. Michael Buehrer, Claudio R. C. M. Da Silva
  (Virginia Polytechnic Institute / State University, USA)

- **Design and Evaluation of a New Localization Scheme for Underwater Acoustic Sensor Networks**
  Tao Bian, R. Venkatesan, Cheng Li (Memorial University, Canada)

- **A Graph Embedding Method for Wireless Sensor Networks Localization**
  Chenggun Wang, Jiming Chen, Youxian Sun (Zhejiang University, China)
  Xeumin (Sherman) Shen (University of Waterloo, Canada)

- **Robust Maximum Likelihood Acoustic Source Localization in Wireless Sensor Networks**
  Yong Liu
  (Northwestern Polytechnical University / University of Wisconsin, China)
  Yuhen Hu (University of Wisconsin-Madison, USA)
  Quan Pan (Northwestern Polytechnical University, China)

Thursday, 3 December 2009 • 14:00 – 16:00
Location: Honolulu Suite 2

**AHSN-21: Security I**

Chair: TBD

- **Secure Unified Cellular Ad Hoc Network Routing**
  Jason J. Haas, Yih-Chun Hu (University of Illinois, Urbana-Champaign, USA)

- **Channel-Aware Detection of Gray Hole Attacks in Wireless Mesh Networks**
  Devu Manikantan Shila, Yu Cheng, Tricha Anjali
  (Illinois Institute of Technology, USA)

- **Secure Framework for Voice Transmission over Multipath Wireless Ad Hoc Network**
  Binod Vaidya (Institute of Telecommunications, Portugal)
  Mieso K. Denko (University of Guelph, Canada)
  Joel J. C. P. Rodrigues (University of Beira Interior, Portugal)

- **Tiered Authentication of Multicast Traffic in Wireless Ad Hoc Networks**
  Mohamed Younis (University of Maryland, Baltimore County, USA)
  Osama Farrag (Johns Hopkins University, USA)

- **An Effective Strategy for Greedy Behavior in Wireless Ad hoc Networks**
  Soufiene Djahel, Farid Naït-Abdesselam (University of Lille, France)
  Damla Turgut (University of Central Florida, USA)

- **Performance Sensitivities of Wireless Mesh Networks under Path-based DoS Attacks**
  Avesh K. Agarwal, Wenye Wang (North Carolina State University, USA)

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Location: Iolani Suite 5 – 6

**CISS-08: Information Hiding and Information Gathering**

Chair: Yong Xiang (Deakin University, Australia)

- **A Novel Pseudonoise Sequence for Time-Spread Echo Based Audio Watermarking**
  Iynkaran Natgunanathan, Yong Xiang (Deakin University, Australia)

- **Embedding a Covert Channel in Active Network Connections**
  Hassan Khan, Yousa Javed, Faizan Mirza, Sad Ali Khayam
  (National University of Sciences & Technology, Pakistan)

- **Robust Image Data Hiding Using Geometric Mean Quantization**
  Mohammad Ali Akhaee, Shahrokh Ghaemmaghami, Amir Nikooyehjad,
  Farokh Marvasti (Sharif University of Technology, Iran)

- **An Anonymous Communication Mechanism without Key Infrastructure based on Multi-paths Network Coding**
  Weiping Wang, Guihua Duan, Jianxin Wang (Central South University, China)
  Jianer Chen (Texas A&M University, USA)

- **Using Network Motifs to Identify Application Protocols**
  Edward G. Allan, Jr., William H. Turkett, Jr., Erin W. Fulp
  (Wake Forest University, USA)

- **A New Data Streaming Method for Locating Hosts with Large Connection Degree**
  Xiaohong Guan, Pinghui Wang, Tao Qin (Systems Engineering Institution, China)
CQPRM-13: Topics in Communications QoS, Reliability & Performance Modeling II (Poster)

Chair: Nelson L. S. de Fonseca (State University of Campinas, Brazil)

Hybrid Video-Quality-Estimation Model for IPTV Services
Kazuhisa Yamagishi, Taichi Kawano, Takanori Hayashi (NTT, Japan)

A Framework for Modeling the Lifetime and Residual Energy Distribution in Wireless Networks
Krishna Ramachandran, Biplab Sikdar (Rensselaer Polytechnic Institute, USA)

An Optimal Batch Scheduling Algorithm for OBS Networks
Gustavo C. Figueiredo, Eduardo Xavier, Nelson L. S. de Fonseca (State University of Campinas, Brazil)

Revenue Maximization for Communication Networks with Usage-Based Pricing
Shuqin Li, Jianwei Huang, Shuo-Yen Li (Chinese University of Hong Kong, Hong Kong)

PEMP: Peering Equilibrium MultiPath Routing
Stefano Secci, Jean-Louis Rougier (Telecom ParisTech, France)

EXIT Chart Evaluation of a Receiver Structure for Multi-User Multi-Antenna OFDM Systems
Peter Hammarberg, Fredrik Rusek (Lund University, Sweden)

Rateless Codes with Optimum Intermediate Performance
Ali Talari, Nazanin Rahnavard (Oklahoma State University, USA)

Rateless Multilevel Coding and Applications
Trung Thanh Nguyen, Lutz Lampe (University of British Columbia, Canada)

Near-Shannon-Limit Linear-Time-Encodingable Nonbinary Irregular LDPC Codes
Jie Huang, Shengli Zhou, Peter Willett (University of Connecticut, USA)

Exploiting Opportunistic Multiuser Detection in Decentralized Multiuser MIMO Systems
Rui Zhang (Institute of Infocomm Research, Singapore)

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Location: Sea Pearl Suite 5 – 6

CTS-11: Relay Networks I
Chair: Martin Haenggi (University of Notre Dame, USA)

Asymptotic Capacity of Large Fading Relay Networks under Random Attacks
Chuan Huang (Texas A&M University, USA)

Multihop MIMO Relay Networks with ARQ
Yao Xie (Stanford University, USA)

Analog Source Exchange with the Help of a Relay
Tung T. Kim, H. Vincent Poor (Princeton University, USA)

Beamforming in Wireless Relay-Interference Networks with Quantized Feedback
Erdem Kayoucu, Hamid Jafarkhani (University of California, Irvine, USA)

Quantization of Channel State Information for Detect-and-Forward Relaying Schemes
Mustapha Benjillali, Leszek Szczecinski (INRS-EMT, Canada)

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CTS-10: Iterative Detection and Decoding
Chair: Lutz Lampe (University of British Columbia, Canada)

Achievable Rates of Coded Linear Systems with Iterative MMSE Detection
Xiaojun Yuan, Ping Li (City University of Hong Kong, Hong Kong)

EXIT Chart Evaluation of a Receiver Structure for Multi-User Multi-Antenna OFDM Systems
Peter Hammarberg, Fredrik Rusek (Lund University, Sweden)

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John M. Cioffi (Stanford University, USA)
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Location: Coral Ballroom Lounge

ONS-08: Topics in Optical Networking (Poster)
Chair: Naoaki Yamanaka (Keio University, Japan)

Scheduling Algorithms in LITPIC – Digital Optical Networks using Light-trails and Photonic Integrated Circuits
Ashvin Gurnaste (Indian Institute of Technology, India)
Arum Somani (Iowa State University, USA)

Distributed Routing Path Optimization for OBS Networks based on Ant Colony Optimization
João Pedro (Nokia Siemens Networks S.A., Portugal)
João Pires (Instituto de Telecomunicações/Instituto Superior Técnico, Portugal)
Joao Paulo Carvalho (INESC-id, Portugal)

Design and Experimentation of an Optical-Header Processing and Access Control System for a Packet-Switched WDM Metro Ring Network
Maria C. Yang (National Chung Hsing University, Taiwan)
Ya-Shian Wang (ChungHwa Telecom Co., Ltd., Taiwan)
Lin Yu-Min (Industrial Technology Research Institute, Taiwan)

Emulation of Optical PIFO Buffers
Houman Rastegarfar, Monia Ghobadi, Yashar Ganjali (University of Toronto, Canada)

Altering Grooming Decisions to Enhance p-Cycle Design Efficiency
Diane Prisca Onguetou, Wayne D. Grover (University of Alberta, Canada)

ONU Placement in Fiber-Wireless (FiWi) Networks Considering Peer-to-Peer Communications
Zeyu Zheng, Jianping Wang (City University of Hong Kong, Hong Kong)
Xiunian Wang (University of Science and Technology of China, China)

Thursday, 3 December 2009 • 14:00 – 16:00
Location: Iolani Suite 1 – 2

SPC-08: SIMO, MISO and MIMO Systems I
Chairs: Jinho Choi (Swansea University, UK)
Tomohiko Taniguchi (Fujitsu Laboratories Ltd., Japan)

Analytical Comparison of Power Allocation Methods in MIMO Systems with Singular Value Decomposition
Alberto Zanella (WiLab/EIT-B CNR, Italy)
Marco Chiani (WiLab/DEIS University of Bologna, Italy)

On the Relation of MIMO APP Detection and SIMO Maximum Ratio Combining
Andreas Ibing, David Kühling, Holger Boche (Fraunhofer Institute for Telecommunications, Heinrich-Hertz Institut, Germany)

An Efficient Parallel Algorithm with Partial Decision Feedback for Near-Optimal MIMO Detection
Cong Xiong, Xin Zhang, Kai Wu, Dacheng Yang (Beijing University of Posts and Telecommunications, China)

An Efficient Adaptive Frequency Diversity Scheme for IEEE 802.11n Networks
Felip Riera-Palou, Guillem Femenias (University of the Balearic Islands, Spain)

Low Complexity SIC-based MIMO Detection with List Generation In The LR Domain
Jinho Choi (Swansea University, UK)
Huan X. Nguyen (Glasgow Caledonian University, UK)

Simplified Maximum-Likelihood Precoder Selection for Limited Feedback Spatial Multiplexing Systems
Jong-Ho Lee (Georgia Institute of Technology, USA)
Sung-yoon Jung (Yonsei University, Korea)
Daeyoung Park (Inha University, Korea)

Thursday, 3 December 2009 • 14:00 – 16:00
Location: Sea Pearl Suite 1 – 2

SAC(CRN)-09: Cooperation in Cognitive Radio Networks II
Chair: Mainak Chatterjee (University of Central Florida, USA)

Cooperative Quickest Spectrum Sensing in Cognitive Radios with Unknown Parameters
Sepideh Zarir, Teng Joon Lim (University of Toronto, Canada)

Cooperative Covariance and Eigenvalue Based Detections for Robust Sensing
Yonghong Zeng, Ying-Chang Liang (Institute for Infocomm Research, Singapore)
Edward C. Y. Peh (Nanyang Technological University, Singapore)
Anh Tuan Hoang (Institute for Infocomm Research, Singapore)

Misbehaviour Detection in Cognitive and Cooperative Networks
Lorenza Giupponi, Christian Ibars (Centre Tecnològic de Telecomunicacions de Catalunya, Spain)

A Novel Spectrum Sharing Technique based on Channel Occupancy Rate Information
Kenta Umebayashi, Kohei Kasahara, Yukihiro Kamiya, Yasuo Suzuki (Tokyo University of Agriculture and Technology, Japan)

Optimal Linear Soft Fusion Schemes for Cooperative Sensing in Cognitive Radio Networks
Bin Shen, Kyungsup Kwak (Inha University, Korea)
Zhiquan Bai (Shadong University, China)

Bargaining to Improve Channel Sharing between Selfish Cognitive Radios
Hua Liu (University of Southern California, USA)
Allen B. MacKenzie (Virginia Polytechnic Institute / State University, USA)
Bhaskar Krishnamachari (University of Southern California, USA)
Thursday, 3 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 1
WCS-29: Cooperative Communication:
Performance Analysis
Chair: Are Hjørungnes (University of Oslo, Norway)

- Exact Capacity Analysis of Rate Adaptive, Power Nonadaptive, Multibranch, Multihop, Decode-and-Forward Relaying Networks
  Reza Nikjah, Norman C. Beaulieu (University of Alberta, Canada)
- Exact Closed-Form Expressions for the Outage Probability and Ergodic Capacity of Decode-and-Forward Opportunistic Relaying
  Reza Nikjah, Norman C. Beaulieu (University of Alberta, Canada)
- Performance Analysis of Incremental-Best-Relay Amplify-and-Forward Technique
  Salama S. Iki, Murat Uysal (University of Waterloo, Canada)
  Mohamed H. Ahmed (Memorial University, Canada)
- Performance Analysis of Incremental-Relay-Selection Decode-and-Forward Technique
  Salama S. Iki, Murat Uysal (University of Waterloo, Canada)
  Mohamed Ahmed (Memorial University, Canada)
- SER Performance Analysis for Physical Layer Network Coding over AWGN Channel
  Kejie Lu (University of Puerto Rico, Mayaguez, Puerto Rico)
  Shengli Fu (University of North Texas, USA)
  Yi Qian (National Institute of Standards and Technology, USA)
  Hsiao-Hwa Chen (National Cheng Kung University, Taiwan)
- Performance Analysis of Physical Layer Network Coding in Two-Way Relay Channels
  Raymond H. Y. Louie, Yonghui Li, Branka Vucetic (University of Sydney, Australia)

Thursday, 3 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 2
WCS-30: Spectrum Sharing
Chair: Xianbin Wang (University of Western Ontario, Canada)

- Power Allocation for OFDM-Based Cognitive Radio Systems with Hybrid Protection to Primary Users
  Xin Kang, Hari Krishna Garg (National University of Singapore, Singapore)
  Yung-Chang Liang, Rui Zhang (Institute of Infocomm Research, Singapore)
- Cognitive Radio Enhancements for Legacy Networks using Cooperative Diversity
  Zhanwei Sun (University of Notre Dame, USA)
  Ioannis Krikidis (University of Edinburgh, UK)
  J. Nicholas Lanaman (University of Notre Dame, USA)
  John S. Thompson (University of Edinburgh, UK)
- An Auction-Based Incentive Mechanism for Non-Altruistic Cooperative ARQ via Spectrum-Leasing
  Igor Stanojev (Politecnico di Milano, Italy)
  Osvaldo Simeone (New Jersey Institute of Technology, USA)
  Umberto Spagnolini (Politecnico di Milano, Italy)
  Yeheksel Bar-Ness (New Jersey Institute of Technology, USA)
  Raymond L. Pickholtz (George Washington University, USA)
- Centralized Inter-Network Spectrum Sharing with Opportunistic Frequency Reuse
  Wei Ni, Iain B. Collings (Commonwealth Scientific and Industrial Research Organization, Australia)
- A Game Theoretic Approach to Multi-User Spectrum Allocation
  Peter von Wriycz, M. R. Bhavani Shankar, Mats Bengtsson, Björn Ottersten (Royal Institute of Technology, Sweden)
- Opportunistic Exploitation of Bandwidth Resources through Reinforcement Learning
  Bechir Hamaouli, Pavithra Venkatraman (Oregon State University, USA)
  Mohsen Guizani (Western Michigan University, USA)

Thursday, 3 December 2009 • 14:00 – 16:00
Location: South Pacific Ballroom 3
WCS-31: OFDM
Chair: Hlaing Minn (University of Texas, Dallas, USA)

- Subchannel Allocation in Relay-Enhanced OFDMA Downlink With Imperfect Feedback
  Juoko Leinonen (University of Oulu, Finland)
  Taneli Rihonen, Jyrki Hamalainen (Helsinki University of Technology, Finland)
  Markku Juntti (University of Oulu, Finland)
- A Novel Iterative Decision-Directed Differential Detection Technique For Differential OFDM Systems
  Liang Zhang, Louis Thibault, Zhihong Hong (Communications Research Centre, Canada)
- Optimal Pilot Power Allocation for OFDM Systems with Transmitter and Receiver IQ Imbalances
  V. K. Varma Gottumukkala, Hlaing Minn (University of Texas, Dallas, USA)
- Effect of Nonlinear Amplifier in Companded OFDM with Application to 802.11n WLAN
  David W. Chi, Pankaj Das (University of California, San Diego, USA)
- Low Complexity Semi-blind Bayesian Iterative Receiver for MIMO-OFDM Systems
  Chun-lin Xiong, Xin Wang, Degang Wang, Ji-Bo Wei (National University of Defense Technology, China)
- A Theoretical Treatment of PA Power Optimization in Clipped MIMO-OFDM Systems
  Hun Seok Kim, Babak Daneshrad (University of California, Los Angeles, USA)

Thursday, 3 December 2009 • 14:00 – 16:00
Location: Kahili Suite 2
WCS-32: Space-time Coding
Chair: John Barry (Georgia Institute of Technology, USA)

- Unitary Space-Time Modulation for Single-Carrier Transmission over Frequency-Selective Channels
  Der-Feng Tseng (National Taiwan University of Science and Technology, Taiwan)
- Transmit Diversity Scheme over Single SC-FDM Symbol for LTE-Advanced
  Xiliang Luo, Peter Gaal, Wanshi Chen, Xiaoxia Zhang, Juan Montojo (Qualcomm Inc., USA)
- Bandwidth Efficient Block Spreading Linear Dispersion Codes in Frequency Selective Fading Channels
  Yue Wang, Justin P. Coon (Toshiba Research Europe Limited, UK)
- A Systematic Design of Space-Time Block Codes Achieving Full-Diversity with Partial Interference Cancellation Group Decoding
  Wei Zhang (University of New South Wales, Australia)
  Xiang-Gen Xia (University of Delaware, USA)
- Embedded Orthogonal Space-Time Codes for High Rate and Low Decoding Complexity
  Mohammed Sinnokrot, John R. Barry, Vijay K. Madisetti (Georgia Institute of Technology, USA)
- A Simple Design of Space-Time Block Codes Achieving Full Diversity with Linear Receivers
  Huiming Wang (Xi’an Jiaotong University, China)
  Xiang-Gen Xia (University of Delaware, USA)
  Qinye Yin (Xi’an Jiaotong University, China)
  Bin Li (Huawei Technologies, China)
Thursday, 3 December 2009 • 14:00 – 16:00
Location: Coral Ballroom 2
WNS-17: Wireless PANs and Wireless Sensor Networks
Chair: Gianluigi Ferrari (University of Parma, Italy)

End-to-End Delay and Network Lifetime Analysis in a Wireless Sensor Network Performing Data Aggregation
Laura Galluccio, Sergio Palazzo (University of Catania, Italy)

Maximizing Lifetime of Sensor-Target Surveillance in Wireless Sensor Networks
Hai Liu, Xiaowen Chu, Yiu-Wing Leung
(Hong Kong Baptist University, Hong Kong)
Xiaohua Jia (City University of Hong Kong, Hong Kong)
Peng-Jun Wan (Illinois Institute of Technology, USA)

Lifetime Maximization in Wireless Sensor Networks with an Estimation Mission
Iordanis Koutsopoulos (University of Thessaly, Greece)
Maria Halkidi (University of Piraeus, Greece)

Dynamic Reconfiguration in Beaconless IEEE 802.15.4 Networks under Varying Traffic Loads
Dawn Rohm, Mukul Goyal, Weigao Xie, Balaji Polepalli, Hossein Hosseini
(University of Wisconsin-Milwaukee, USA)
August Divjak, Yusuf Bashir (Johnson Controls Inc, USA)

A Simulation Study of CSMA/CA Performance in 60 GHz WPANs
Wei Zhou (Iowa State University, USA)
Saishankar Nandagopalan ( Broadcom, USA)
Daji Qiao (Iowa State University, USA)

Beam Codebook Based Beamforming Protocol for Multi-Gbps Millimeter-Wave WPAN Systems
Junyi Wang, Zhou Lan, Chang-Woo Pyo, Tuncer Baykas, Chin-Sean Sum, M. Aizur Rahman, Ryuhei Funada, Fumio Kojima
(National Institute of Information & Communications Technology, Japan)
Hiroshi Harada, Shuzo Kato
(National Institute of Information & Communications Technology, Japan)
AHSN-22: Security II
Chair: Dijiang Huang (Arizona State University, USA)

MPC: Mitigating Stealthy Power Control Attacks in Wireless Ad Hoc Networks
Issa Khalil (United Arab Emirates University, UAE)

Tame Pool-based Pairwise Key Predistribution for Large-scale Sensor Networks
Yen-Hua Liao (National Chengchi University, Taiwan)

Intrusion Detection in Gaussian Distributed Heterogeneous Wireless Sensor Networks
Yun Wang (University of Cincinnati, USA)

CAT: Building Couples to Early Detect Node Compromise Attack in Wireless Sensor Networks
Xiaodong Lin (University of Ontario Institute of Technology, Canada)

On The Connectivity of Key-Distribution Strategies in Wireless Sensor Networks
H. Shafiei (IPM, Iran)

Distributed Data-theft Detection in Wireless Sensor Networks
Mukesh Jagasia, Dijiang Huang (Arizona State University, USA)

Thursday, 3 December 2009 • 16:30 – 18:30
Location: Kahili Suite 1

CQPRM-11: Next Generation Wireless Networks Performance
Chair: Michael Devetsikiotis (North Carolina State University, USA)

Optimal Resource Scheduling in Wireless Multi-Service Systems with Random Channel Connectivity
Hussein Al-Zubaidy, Ioannis Lambadaris (Carleton University, Canada)

Uplink Capacity of 802.16j Mobile Multihop Relay Networks with Transparent Relays
Hua Wang (Technical University of Denmark, Denmark)

On the Design of Bi-connected Wireless Mesh Network Infrastructure with QoS Constraints
Dijohara Benyamina, Abdelhakim Hafid, Michel Gentreau (University of Montreal, Canada)

VoIP Capacity over PCF with Imperfect Channel
Md. Atiur Rahman Siddique, Joarder Kamruzzaman (Monash University, Australia)

Optimizing Power Utilization in Vehicular Ad Hoc Networks through Angular Routing: A Protocol and its Performance Evaluation
Sanjay K. Dhurandher (University of Delhi, India)

Performance Modeling for Heterogeneous Wireless Networks with Multiservice Overflow Traffic
Qian Huang, King-Tim Ko (City University of Hong Kong, Hong Kong)

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Thursday, 3 December 2009 • 16:30 – 18:30
Location: Sea Pearl Suite 1 – 2

**NGNI-09: Splicing, Bandwidth and Congestion Control**
Chair: Stefano Giordano (University of Pisa, Italy)

- On the Safety and Security of Path Splicing: A Case Study for Path Splicing on the GÉANT Network
  Christopher Page, Mina Guirguis (Texas State University, USA)

- S-XCP: Improving XCP to Achieve Efficient and Fair Bandwidth Allocation
  Hairui Zhou, Guanzhong Dai (Northwestern Polytechnical University, China)
  Fanghong Ye (Muenster University, Germany)
  Huixiang Zhang (Northwestern Polytechnical University, China)

- General Congestion Control for High Bandwidth-Delay Product Networks
  Chengnian Long, Xudong Chai, Xinping Guan
  (Shanghai Jiao Tong University, China)
  Qian Zhang (Hong Kong University of Science and Technology, Hong Kong)

- Delay-based Cloud Congestion Control
  Mitchell Gusat (IBM, Switzerland)
  Robert Birke (Politecnico di Torino, Italy)
  Cyriel Minkenberg (IBM, Switzerland)

- Predicting Available Bandwidth of Internet Path with Ultra Metric Space-based Approaches
  Changyou Xing, Ming Chen, Li Yang
  (PLA University of Science and Technology, China)

- Path Splicing with Guaranteed Fault Tolerance
  Thomas Erlebach (University of Leicester, UK)
  Anna Mereu (University of Cagliari, Italy)

Thursday, 3 December 2009 • 16:30 – 18:30
Location: Lehua Suite

**NGNI-10: Wireless & Mobility**
Chair: Chonggang Wang (NEC Laboratories America, USA)

- Receiver-Driven Queue Management for Achieving RTT-fairness in Wi-Fi Networks
  Dzmitry Klazovich (University of Trento, Italy)
  Pedro Henrique Gomes (State University of Campinas, Brazil)
  Fabrizio Granelli (University of Trento, Italy)
  Nelson L. S. de Fonseca (State University of Campinas, Brazil)

- Preventing Unauthorized Messages in DTN Based Mobile Ad hoc Networks
  Hany Samuel, Weihsia Zhuang (University of Waterloo, Canada)

- A Game-Theoretic Framework for Intra-ONU Scheduling in Integrated EPON/WiMAX Networks
  Hui-Tang Lin, Ying-You Lin (National Cheng Kung University, Taiwan)
  Wang-Rong Chang (Industrial Technology Research Institute-South, Taiwan)
  Song-Ming Chen (National Cheng Kung University, Taiwan)

- A Weighted Bipartite Graph Based Network Selection Scheme for Multi-Flows in Heterogeneous Wireless Network
  Yucheng Zhang, Yao Yuan (Institute of Computing Technology, China)
  Jihua Zhou (Chongqing Jinmei Communication Co. Ltd., China)
  Jinglong Hu (Institute of Computing Technology, China)
  Jiangtao Dong (54th Research Institute of CETC, China)
  Jinglin Shi (Institute of Computing Technology, China)

- Integrated BS/ONU Placement in Hybrid EPON-WiMAX Access Networks
  Yu Liu, Chi Zhou, Yu Cheng (Illinois Institute of Technology, USA)

- On the Merits of Migrating to a Fully Packet-Based Mobile Backhaul RAN Infrastructure
  Sherif Sherif (City University of New York, USA)
  Georgios Ellinas (University of Cyprus, Cyprus)
  Antonis Hadjiantonis (University of Nicosia, Cyprus)
  Roger Dorsinville, Mohamed Ali (City University of New York, USA)

Thursday, 3 December 2009 • 16:30 – 18:30
Location: Iolani Suite 1 – 2

**SPC-10: SIMO, MISO and MIMO Systems II**
Chairs: Tiffany Jing Li (Lehigh University, USA)
Hsiao-Chun Wu (Louisiana State University, USA)

- Near-Capacity Iteratively Decoded Markov-Chain Monte-Carlo Aided BLAST System
  Wei Liu, Lingkun Kong, Soon Xin Ng (University of Southampton, UK)
  Jian-Dong Li (Xidian University, China)
  Lajos Hanzo (University of Southampton, UK)

- Iteratively Detected Three-Stage Multi-Dimensional Sphere Packing Modulation Aided Multi-Functional MIMO
  Mohammed El-Hajjar, Osamah Alamri, Lajos Hanzo
  (University of Southampton, UK)

- Statistical Characterization of Power Amplifier Nonlinearity at 60 GHz: MIMO Beam-forming Analysis
  Navid Lashkarian (San Jose State University, USA)
  Babak Heydari (University of California, Berkeley, USA)
  Payman Jula (Simon Fraser University, Canada)

- On the Performance of Adaptive Decode-and-Forward Cooperative Diversity with the Nth Best-Relay Selection Scheme
  Salama S. Ikki (University of Waterloo, Canada)
  Mohamed H. Ahmed (Memorial University, Canada)

- A Low-Complexity SLM PAPR Reduction Scheme for Interleaved OFDMA Uplink
  Sen-Hung Wang, Jia-Cheng Xie, Chih-Peng Li
  (National Sun Yat-Sen University, Taiwan)
Thursday, 3 December 2009 • 16:30 – 18:30
Location: Iolani Suite 3 – 4

SPC-11: Transmitter and Receiver Techniques II
Chairs: Xianbin Wang (University of Western Ontario, Canada)
Tomohiko Taniguchi (Fujitsu Laboratories Ltd., Japan)

Searching in the Delta Lattice: An Efficient MIMO Detection for Iterative Receivers
Tzi-Dar Chiueh (National Taiwan University, Taiwan)
Gerd Ascheid, Heinrich Meyer (Institute for Integrated Signal Processing Systems, Germany)

Iterative Receiver Techniques for SC-FDMA Uplink Block Transmission: Design and Performance Evaluation
Luis Charrua, Paulo Torres, Victor Gonçalves, A. Gusmão (Technical University of Lisbon, Portugal)

A Novel Synchronization Algorithm Dispensing with Searching for UWB Signals
Zhiyuan Ren, Tiejun Lv (Beijing University of Posts & Telecommunications, China)

Soft Decision Aided Suboptimal ML Detection Receiver for Clipped COFDM Transmissions
Romain Déjardin, Maxime Colas, Guillaume Gelle (CReSTIC – SysCom, France)

SNR Estimation for a Non-Coherent Binary Frequency Shift Keying Receiver
Syed Ali Hassan, Mary Ann Ingram (Georgia Institute of Technology, USA)

Bayesian Robust Linear Transceiver Design for Dual-Hop Amplify-and-Forward MIMO Relay Systems
Chengwen Xing, Shaodan Ma, Yi-Chung Wu (University of Hong Kong, Hong Kong)

Thursday, 3 December 2009 • 16:30 – 18:30
Location: Iolani Suite 5 – 6

SPC-12: Signal Detection and Synchronization II
Chairs: Tadashi Fujino (University of Electro-Communications, Japan)
Hsiao-Chun Wu (Louisiana State University, USA)

Near-Optimal Detection in MIMO Systems using Gibbs Sampling
Morten Hansen (Technical University of Denmark, Denmark)
Babak Hassibi, Alexandros Dimakis, Weiyu Xu (California Institute of Technology, USA)

A Gram-Schmidt Based Lattice-Reduction Aided MMSE Detection in MIMO Systems
Tadashi Fujino, Shinjiro Wakazono, Yusuke Sasaki (University of Electro-Communications, Japan)

Implementation of a High-throughput and Area-efficient MIMO Detector Based on Modified Dijkstra's Search
Tae-hwan Kim, In-Cheol Park (Korea Advanced Institute of Science and Technology, Korea)

Optimal Detector for Multitaper Spectrum Estimator in Cognitive Radios
Tsung-Wei Chiang, Jung-Mao Lin, Hsi-Pin Ma (National Tsing Hua University, Taiwan)

On the Optimality of Timing with Dirty Templates
Wei Zhang, Wenshu Zhang, Liiqing Yang (University of Florida, USA)

Hybrid MIMO Receiver using QR-MLD and QR-MMSE
Youngjae Kim, Jong Hyeon Park, Je Woo Kim (Qualcomm Inc., USA)

Thursday, 3 December 2009 • 16:30 – 18:30
Location: South Pacific Ballroom 1

WCS-33: Joint Source and Channel Coding
Chair: Claudio Silva (Virginia Polytechnic Institute / State University, USA)

Distributed Joint Source-Channel coding for Functions over a Multiple Access Channel
R. Rajesh, Vinod Sharma (Indian Institute of Science, India)

Joint Source-Channel Coding over a Fading Multiple Access Channel with Partial Channel State Information
R. Rajesh, Vinod Sharma (Indian Institute of Science, India)

Motion-compensated Scalable Video Transmission over MIMO Wireless Channels under Imperfect Channel Estimation
Hobin Kim (University of California, San Diego, USA)
Sun Yong Kim (Konkuk University, Korea)
Pamela C. Cosman, Laurence B. Milstein (University of California, San Diego, USA)

Progressive Source Transmissions using Joint Source-Channel Coding and Hierarchical Modulation in Packetized Networks
Suayb S. Arslan, Pamela C. Cosman, Laurence B. Milstein (University of California, San Diego, USA)

Robust Transmission of H.264 Coded Video Using Three-Stage Iterative Joint Source and Channel Decoding
Nasruminallah Nasruminallah, Mohammed El-Hajjar, Lajos Hanzo (University of Southampton, UK)

Unequal Power Allocation for Transmission of JPEG2000 Images over Wireless Channels
Mahin Torki, Atousa HajishirinMamadi (Simon Fraser University, Canada)

Wednesday, 2 December 2009 • 13:30 – 18:30
Location: South Pacific Ballroom 2

WCS-34: Network Coding
Chair: Hai Jiang (University of Alberta, Canada)

A Joint Interchannel and Network Coding Schema for nVoD Services over Wireless Mesh Networks
Rafael Asorey-Cacheda (Universidad de Vigo, Spain)
Hong Huang (New Mexico State University, USA)
Francisco Javier González-Castaño (Universidad de Vigo, Spain)
Eric Johnson (New Mexico State University, USA)
Cristina López-Bravo, Felipe Gil-Castiñeira (Universidad de Vigo, Spain)

XOR-Forwarding for Wireless Networks
Hsiang-Po Wang, Yi-Ta Chuang, Chih-Wei Yi, Yu-Chee Tseng (National Chiao-Tung University, Taiwan)
Pin-Chuan Liu (Industrial Technology Research Institute, Taiwan)

On Performance of Multi-Timeslots Network Coding (MTNC) in Wireless Relay Networks
Hongmei Liu, Gang Chai, Wei Bao, Mugen Peng, Wenbo Wang (Beijing University of Posts and Telecommunications, China)

Analysis and Optimization for Multicast System with Regenerative Network Coding
Jun Li, Mingli You, Lin Yang (Alcatel Lucent Shanghai Bell, China)

Outage Probability Analysis of Linear Block Network Coding (LBNC) in Wireless Relay Networks
Wei Bao, Wenbo Wang, Hongmei Liu, Mugen Peng (Beijing University of Posts and Telecommunications, China)

Constellation Selection in Network Coded Distributive Antenna System
Taizel ur Rehman Ahssin, Slimane Ben Slimane (Royal Institute of Technology, Sweden)
WCS-35: Diversity Techniques  
Chair: Hamid Jafarkhani  
(University of California, Irvine, USA)  

Predictive Transmit Antenna Selection with Maximal Ratio Combining  
Shiva Prakash, Ian McLoughlin  
(Nanyang Technological University, Singapore)  

Antenna Diversity for a Mobile Terminal: Theory, Simulation and Measurement  
Bin Guo  
(Illinois Institute of Technology, USA)  

Exploiting the Interference Diversity Gain in Frequency Domain: The UMTS LTE Scenario  
Alireza Attar, Vikram Krishnamurthy  
(University of British Columbia, Canada)  

The Impact of Noise on Switching Rate of L-fold Selection Diversity  
Xin Wang, Norman C. Beaulieu  
(University of Alberta, Canada)  

Asymptotic Performance Analysis of Optimum Combining for Dense Multiple Antenna Reception Under Rayleigh Fading  
Payam Dehghani Rahimzadeh, Norman C. Beaulieu  
(University of Alberta, Canada)  

Optimal Use of Antennas in Interference Networks: A Tradeoff between Rate, Diversity and Interference Alignment  
Aydin Sezgin  
(Emmy-Noether Research Group on Wireless Networks, Germany)  
Syed Ali Jafar, Hamid Jafarkhani  
(University of California, Irvine, USA)
Thursday, 3 December 2009  •  16:30 – 18:30
Location: Coral Ballroom 2

WNS-20: 802.11 Wireless Networks
Chair: Seshadri Mohan (University of Arkansas, Little Rock, USA)

Distributed Physical Carrier Sensing Adaptation Scheme in Cooperative MAP WLAN
Yao Hua (Tsinghua University, China)
Qian Zhang (Hong Kong University of Science and Technology, Hong Kong)
Zhisheng Niu (Tsinghua University, China)

Local Estimation of Probabilities of Direct and Staggered Collisions in 802.11 WLANs
Michael N. Krishnan, Sofie Pollin, Avidh Zakhor
(University of California, Berkeley, USA)

Performance Analysis of Selfish Access Strategies on WiFi Infrastructure Networks
Laura Giarré (University of Palermo, Italy)
Giovanni Neglia (Institut National de Recherche en Informatique et en Automatique, France)
Ilenia Tinnirello (University of Palermo, Italy)

A Packet Scheduling Algorithm for Optimizing Downlink Throughput in Wireless LANs with the One-Sender Multiple-Receiver Technique
Zhenghao Zhang, Steven Bronson (Florida State University, USA)

Local Estimation of Probabilities of Direct and Staggered Collisions in 802.11 WLANs
Michael N. Krishnan, Sofie Pollin, Avidh Zakhor
(University of California, Berkeley, USA)

WNS-23: Network Performance Optimization (Poster)
Chair: Wenye Wang (North Carolina State University, USA)

Effective Cell Size Scheme in Multi-hop Cellular Networks
Hung Tam, Robert Benkoczi, Hosssam Hassanain, Selim Akl
(Queen’s University, Canada)

HTSMA: a Hybrid Temporal-Spatial Multi-Channel Assignment Scheme in Heterogeneous Wireless Mesh Networks
Yan Jin, Ju-Yeon Jo, Mei Yang, Yoohwan Kim, Yingtao Jiang
(University of Nevada, Las Vegas, USA)
John Gowens (Army Research Laboratory, USA)

A Cognitive Approach for Performance Enhancement of Wireless Mesh Networks
Farshad Javadi, Abbas Jamalipour (University of Sydney, Australia)

Q-DRAM: QoE-based Dynamic Rate Adaptation Mechanism for Multicast in Wireless Networks
Kandaraj Piamrat (Institut National de Recherche en Informatique et en Automatique, France)
Adlen Ksentini (IRISA/University of Rennes 1, France)
Jean-Marie Bonnin (Telecom Bretagne, France)
César Viho (University of Rennes 1, France)

Capacity of Wireless Networks with Heterogeneous Traffic
Mingyue Ji, Zheng Wang, Hamid Sadjadpour
(University of California, Santa Cruz, USA)
Jose Joaquin Garcia-Luna-Aceves
(University of California, Santa Cruz / Palo Alto Research Center, USA)
Mobile communication devices are becoming ever more powerful and sophisticated. This course reviews the most recent trends, techniques and system components in the field of wireless multimedia communications.

The objective of this tutorial is to provide an overview of security forensics and address some of the technological and legal issues involved. The discipline involves identification, preservation, and analysis of evidence of security attacks. Forensic activity takes place in a complex technical, legal, and social context which must be understood to fully appreciate its power and value. A few simple forensic tools and an example of tracking the attacker will be demonstrated.

This tutorial reviews applications enablers for challenged networks and discusses related research directions. A three dimensional taxonomy (challenged network type, involved layers, and application) is used as framework for the discussions. The tutorial starts by introducing the most widely deployed challenged networks. After that, we introduce the two challenged networks-agnostic application enablers (i.e. enablers that target all challenged networks), meaning the delay/disruption tolerant network (DTN) overlay of the IETF and the ambient control space (ACS) overlay from an EU 6FP project. The last part of the tutorial focuses on the challenged networks specific enablers (i.e. enablers that target a specific challenged network).

This tutorial will provide a comprehensive overview of PONs, including the network architecture and enabling technologies, as well as diverse versions of PONs and their corresponding protocols. A close examination of the resource management issue along with the state-of-art schemes over time division multiplexed PONs (TDM-PONs) will be presented. This tutorial will also cover the recently proposed candidate architectures for Next Generation Access 1 (NGA1), which has been proposed by FSAN as the first stage of next generation passive optical networks (PONs), and briefly describe the envisioned Next Generation Access 2 (NGA2).

In this tutorial, we present a systematic framework for cross-layer optimization that allows each layer to make autonomous and foresighted decisions on the selected transmission strategies (e.g. protocol parameters and algorithms), while cooperatively maximizing the utility of the wireless user (e.g. multimedia quality) by determining the optimal information to be exchanged among layers. Specifically, this tutorial will focus on systematic cross-layer optimization framework, formal message exchange mechanisms among layers, and on-line learning algorithms for the cross-layer optimization.

This short course will provide an overview of encryption methods and data privacy. The tutorial will also cover modern network security issues, network security levels, and security layers in communication networks; mathematical foundation for security; symmetric & asymmetric ciphers; key distribution algorithms; quantum cryptography and QKD; vulnerabilities and countermeasures in QC; biometrics in communication networks; chaotic processes in security; and security in the next generation optical networks.
Monday, 30 November 2009 • 14:00 – 17:30
Location: Kahili Suite
T9: Multiple Antenna Systems from Optimum Combining to MIMO: Random Matrix Theory Analysis
Instructors: Marco Chiani, DEIS, University of Bologna
Moe Win, Massachusetts Institute of Technology

This tutorial provides the basic principles and applications of multiple antenna systems, including MIMO and distributed MIMO, and their analysis based on random matrix theory. The effect of space and time correlation on the capacity of MIMO channels will first be presented for a point-to-point link. In network scenarios, where many users employ MIMO, we discuss how the capacity decreases due to the presence of MIMO interferers. Applications include wireless cellular systems, high-speed wireless LAN, WiMAX, as well as energy-constrained multi-node wireless systems.

Monday, 30 November 2009 • 14:00 – 17:30
Location: Hibiscus Suite
T10: Broadband Video Networking
Instructor: Benny Bing, Georgia Institute of Technology

This tutorial focuses on the optimization of video transmission over broadband access networks and the Internet. This tutorial will describe emerging video technologies that can significantly improve the quality of video transmission. Participants will learn how these innovations can jumpstart emerging online video streaming services and allow these services to achieve video quality levels comparable to that delivered over managed networks and proprietary set-top hardware.

Monday, 30 November 2009 • 14:00 – 17:30
Location: South Pacific Ballroom 1
T11: Practical Steps in Techno-Economic Evaluation of Network Deployment Planning
Instructors: Koen Casier, Jan Van Ooteghem, Bart Lannoo, Sofie Verbrugge, Ghent University

This tutorial aims at giving an overview of the techno-economic planning process for network deployment, migration and/or service offerings. It discusses in detail the entire flow, from input gathering over modeling and up to evaluation (including game theory and real options). Finally, this methodology is applied to a realistic case of an FTTH deployment.

Monday, 30 November 2009 • 14:00 – 17:30
Location: South Pacific Ballroom 2
T12: Cognitive Radio Networks
Instructor: Kwang-Cheng Chen, National Taiwan University

This tutorial gives a complete comprehensive introduction to audience, including state-of-the-art wireless communications and natures, spectrum sensing for cognitive radio “network”, cooperative networking, cognitive/cooperative medium access control, network layer design issues of cognitive/cooperative radio networks, trust and security in heterogeneous cooperative wireless networks, theoretical limitations, and price & spectrum management strategy for operators and users.

Friday, 4 December 2009 • 9:00 – 12:30
Location: Sea Pearl Suite 5 – 6
T14: Game Theory for Cognitive Radio Networks
Instructors: Ekram Hossain, University of Manitoba
Zhu Han, University of Houston

In this tutorial, an intensive (but friendly) introduction to the various game theory models, their fundamental concepts and properties, and their applications in designing dynamic spectrum access protocols for cognitive radio networks (CRNs) will be provided. The scope of this tutorial includes the technical aspects (rather than the regulatory and policy aspects) related to application of the game theory for designing spectrum sharing and management techniques.

Friday, 4 December 2009 • 9:00 – 12:30
Location: Kahili Suite
T15: 3GPP Evolution to 4G Wireless: E-UTRAN and EPC
Instructors: Vijay Varma & Gregory P. Pollini, Telcordia Technologies

The tutorial starts with the drivers and objectives for 3GPP’s long term evolution and optimization of packet core network. This will be followed by a discussion of the E-UTRAN architecture and design. This will be followed by the EPC design that enables QoS support for real-time services and seamless mobility within and across multiple radio access networks. We will conclude the presentation with a status of standardization in 3GPP as well as deployment and market projections for these technologies.

Friday, 4 December 2009 • 9:00 – 12:30
Location: Hibiscus Suite
T16: Radio over Fiber: An Optical Technology for Wireless Access
Instructor: Xavier Fernando, Ryerson University

Optical fiber based wireless (Fi-Wi) access using radio-over-fiber (ROF) concept combines the flexibility of wireless with the capacity of fiber to support bandwidth hungry services. There are several reasons why widespread interest is currently focused in Fi-Wi networks. This tutorial will cover both optical and wireless aspects.

Friday, 4 December 2009 • 9:00 – 12:30
Location: South Pacific Ballroom 1
T17: Coding for Cooperative Communications
Instructors: Ali Ghrayeb, Concordia University
Tolga Duman, Arizona State University

This tutorial gives a complete overview of the various emerging coding techniques for cooperative communication networks. These include distributed spacetime coding, distributed concatenated coding and iterative decoding, combined network coding and channel coding, among others. The tutorial focuses on the construction and performance analysis of such coding schemes over various wireless channels. In addition, it addresses information theoretical limits for various configurations of cooperative wireless networks.
This tutorial demystifies the field, and focuses on a conceptual understanding of the pieces that someone who isn’t wanting to specialize in cryptography, and yet does want to understand the implications of security on network protocols, needs to know. This tutorial gives an intuitive understanding of the basic cryptographic tools, and focuses on what their functional differences are.

Friday, 4 December 2009 • 14:00 – 17:30
Location: Hibiscus Suite
T22: Femtocells: Opportunities and Challenges
Instructors: Mark Reed, National ICT Australia, ANU
Zhenning Shi, Shanghai Bell - Alcatel Lucent

This course offers an introduction to femtocells, the network architecture, the market, and the technical challenges associated with deploying the technology. The presentation will describe details of the players and the opportunity as well as real-world insights into the challenges associated with network operations and management and the radio air interface interference problems. A discussion on alternative fixed mobile convergence solutions and the cost-benefit trade-off will be performed as well as details of enterprise femtocells and the advantages of such a deployment.

Friday, 4 December 2009 • 14:00 – 17:30
Location: Sea Pearl Suite 3 – 4
T23: MIMO DETECTION: Theory and Practice
Instructor: John R. Barry, Georgia Tech

This tutorial will present the basic principles of MIMO detection. We describe the fundamental problem, present an overview of MIMO detectors that are used in practice, and identify emerging trends and research in the area. Our coverage ranges from simple linear MMSE detectors to the optimal maximum-likelihood sphere detector. We will examine successive cancellation, multistage detectors, the MMSE sphere detector, the Fano algorithm, the M-algorithm, the K-best algorithm, and list-based. Lastly, we will quantify the performance-complexity tradeoff for a variety of detection strategies.

Friday, 4 December 2009 • 14:00 – 17:30
Location: South Pacific Ballroom 2
T24: Nano-Sensor Networks using Molecular Communications
Instructor: Ian F. Akyildiz, Georgia Tech

In this tutorial, state-of-the-art in nanosensors, including architectural aspects, expected features of future nano-sensors, and current developments are presented for a better understanding of nano-sensor network scenarios. Open research challenges, such as the development of network components, molecular communication theory, and the development of new architectures and protocols, are presented which need to be developed in order to pave the way for the development and deployment of nano-sensor networks within the next couple of decades.

Friday, 4 December 2009 • 14:00 – 17:30
Location: Coral Ballroom 3
T25: Getting Your Point Across - Essential Communications for Engineers
Instructor: Celia Desmond, World Class Telecommunications

This seminar addresses many of the areas which enable technical professionals to communicate effectively, orally and in writing, in different situations. The talk directly addresses basic skills of communications, such as preparing presentations, writing reports, and preparing resumes. Equally as important though, the talk addresses the environment in which the communications occur. Successful communications consider the receiver of the communications, ensuring that the message is presented in a form which will be attractive to the receiver.
Monday, 30 November 2009 • 9:00 – 17:30
Location: South Pacific Ballroom 3

WS1: IEEE 802® Standards Education Workshop: The World of IEEE 802 Standards
Organizers: Sponsored and organized by the IEEE Standards Education Committee, a Joint Standing Committee of the IEEE Educational Activities Board and the IEEE Standards Association
Chair: David Law, Chairman, IEEE 802.3

This workshop will provide a full day of immersion into the world of IEEE 802 Standards and cover each of the working groups developing standards in both the wired and wireless areas/fields. Included will be an overview and scope of each technical working group and how they relate or differ from each other. The presenters will focus on the functional capabilities and market relevance of the standards, and attendees will learn the status of current and future projects within the groups. The workshop will also walk attendees through the standards development process, and include an important discussion on intellectual property issues.

Monday, 30 November 2009 • 9:00 – 17:30
Location: South Pacific Ballroom 4

WS2: 5th IEEE Broadband Wireless Access Workshop
Organizers: Thomas Michael Bohmert, SAP Research CEC Zurich
Dmitri Molitchanov, Tampeře University of Technology
Edmundo Monteiro, University of Coimbra
Dirk Staehle, University of Wuerzburg
Gabor Fodor, Ericsson Research

Internet access is undergoing a fundamental change. A steadily increasing spectrum of services is attracting a rapidly growing number of users which, in turn, wish to access these services ‘anytime and anywhere’. In order to meet this demand, Broadband Wireless Access (BWA) technologies are becoming extremely important and vendors and standardization bodies respond to this development with new and powerful BWA technologies.

Although BWA technologies are rapidly maturing, they are far from being complete and optimized for such a versatile environment like the Internet. Consequently, BWA is currently receiving much attention by the research community.

Monday, 30 November 2009 • 9:00 – 17:30
Location: Coral Ballroom 1

WS3: IEEE Workshop on Multi-Gigabit MM-Wave and Tera-Hz Systems (MTWS)
Organizers: Young-Chai Ko, Korea University
Mohamed-Slim Alouini, Texas A&M University at Qatar
AliReza Seyedi, University of Rochester
Robert W. Heath Jr., University of Texas at Austin
Isabelle Siaud, France Telecom R&D
Byoung-Hoon Kim, LG Electronics

The scope of the workshop is to provide a platform for developing an integrated solution to millimeter wave and Tera-Hz wireless communications. The workshop also aims to bring in together both long-term academic and shorter term industrial viewpoints. This workshop is the first ever to bring in together the experts from RF/analog/baseband hardware, physical and MAC layers in order to address the peculiar issues of MTWS.

Monday, 30 November 2009 • 9:00 – 17:30
Location: Coral Ballroom 2

WS4: IEEE Workshop on Below IP Networking
Organizers: Raimo Kantola, Helsinki University of Technology
Ran Giladi, Ben-Gurion University

There are numerous add-on solutions in IP networks. Many of them reside below IP in the protocol stack. Add-ons provide resiliency, traffic engineering, quality of service, network virtualization, network hiding and edge to edge connectivity etc. Ethernet and MPLS footprints in networks are increasing. An industry trend is that from synchronous transmission, networks are moving to packet based transport based on 802.1 variants and IP/MPLS. Both Ethernet and MPLS are being turned into Carrier Grade transport technologies. The 1st IEEE Workshop on Below IP Networking (BIPN 09) provides a venue for academic and industrial research communities for exchanging ideas and experience on all aspects of below IP Networking.

Friday, 4 December 2009 • 9:00 – 17:30
Location: South Pacific Ballroom 3

WS5: 2nd IEEE Workshop on Green Communications
Organizers: Jürgen Quittek, NEC Europe Ltd
Ken Christensen, University of South Florida
Gerhard Fettweis, Technische Universität Dresden
Hiroyuki Morikawa, University of Tokyo

The Second International Workshop on Green Communications will bring together academic and industrial researchers for discussing energy-efficient communications. After the successful first workshop on green communications at ICC 2009 in Dresden, Germany, it will continue to serve as a forum for addressing research challenges between the already established conferences and workshops covering energy efficiency for IT on one side and for wireless sensor networks on the other side.

Friday, 4 December 2009 • 9:00 – 17:30
Location: South Pacific Ballroom 4

WS6: 2nd IEEE Workshop on the Network of the Future (FutureNet II)
Organizers: Masayuki Murata, Osaka University
Dipankar Raychaudhuri, Rutgers University
Rolf Winter, NEC Laboratories Europe
Lars Eggert, Nokia Research Center / Helsinki University of Technology
Ryuutarou Kawamura, NICT / NTT Laboratories
Deep Medhi, University of Missouri-Kansas City

The International Workshop on the Network of the Future (FutureNet II) is a platform for both clean-slate as well as evolutionary approaches for a redesign of the Internet. It will uniquely bring together approaches driven from mobile and wireless demands, network virtualization, network self-management, content and sensor networking and discuss these from both a technical as well as socio-economic perspective.
The objective of the 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 the 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.

This workshop aims at gathering detailed models and data for the different network processes. This includes template or best-practice process descriptions and the associated input data, case study descriptions and results, discussion on methods and tools and the broader context in which this problem resides including the regulatory aspects.

The workshop will focus on the analysis and needs of security infrastructure in telecommunications networks, as well as impacts of increasingly global supply chains on national and international telecommunications infrastructure. The purpose of this workshop is to exchange ideas and experience related to these increasingly important but under-analyzed aspects of infrastructure protection.
Many historical developments contributed towards the goal of GLOBAL CONNECTIVITY. New technologies were developed, new means of telecommunication were used and regulatory policies evolved. This session will examine the sweep of history and consider how past research, development, and deployment of communications infrastructure are evolving into the future.

KEYNOTE PRESENTATION
The ALOHA Protocol
Norm Abramson, University of Hawaii

PAPER PRESENTATIONS
The Invention of Ferrites and their Contribution to the Miniaturization of Radios
Akira Okamoto, TDK History Museum

Research and Events that permitted Facsimile use to Explode in Japan
Kaoro Wakabayashi, NTT Corporation

PANEL DISCUSSION
Who does Research after Divestiture?
Moderator
Steve Weinstein, Consultant

Panelists
J. Cioffi, Stanford University
D. Wedemeyer, University of Hawaii
Paul Kuehn, University of Stuttgart

After the session, a video on the YOSAMI VLF Station will be screened (by Dr. Eiju Matsumoto, Japan Council History Committee).

The Humanitarian Technology Challenge (www.ieee.org/go/htc) is a joint project between the IEEE and the United Nations Foundation, a non-profit humanitarian organization. The project identifies and addresses three key humanitarian challenges, largely in developing countries. The project objective is to create sustainable technology solutions to pressing humanitarian needs that can be implemented locally, within the economic and environmental conditions where they will be deployed. The project also aims to define repeatable processes and models that can be used to address future challenges.

As far as we know, the HTC is the first time that a major humanitarian organization and a technology association have formed an up-front, collaborative relationship. We intend to demonstrate the value of humanitarians working directly with technologists to create innovative solutions that serve the greater good. Supporting this partnership are funding Foundations, such as the Vodafone Foundation and the IEEE Foundation, and non-governmental organizations (NGOs) that have resources “on the ground” in challenge areas, ensuring that solutions developed will be deployable into areas that will need them.

We have identified many humanitarian-driven needs through focus group efforts, and we selected three as Challenges to be addressed. They are: Reliable Electricity, Data Connectivity of Regional Health Offices, and Individual ID Tied to Health Records. Many technologies are applicable to addressing these challenges, including those related to communications.

Working groups have been established to collaborate, both in-person and via web collaboration, in developing open-source-like technological solutions. We call this “collaborative crowdsourcing.” We have IEEE members, other technologists, humanitarians, corporation representatives, philanthropic foundations, academicians, and students participating in the solution process, and we encourage involvement of more.

This session will consist of a panel of leaders participating in the HTC project, to address the background of the project, explain the needs being addressed, and present some of the solution ideas being proposed.
The Global Earth Observation System of Systems (GEOSS) is a complex "system of systems," including sensors, communication systems, spatio-temporal data infrastructures and other components essential for observing the Earth on all relevant scales and disseminating this information to users for a host of important societal benefits. The GEOSS workshop XXXII – Mitigation and Management of Disasters through Communications, will focus specifically on communications systems and infrastructure for GEOSS, with a special emphasis on communications during and after disasters and on communications systems in developing countries.

Workshop Theme
The Workshop will explore the status of existing telecommunications systems and data networks for GEOSS. The discussion will focus on the ability to both build on existing systems and take advantage of new telecommunication services to develop a framework for timely and widespread communication of information to support prediction, mitigation, and management of disasters. Examples of events include rapid processes such as earthquakes, landslides, and tsunamis, events of moderate time scale such as flooding and infectious outbreak, and slower events such as droughts. The theme of the workshop supports Group on Earth Observation (GEO) tasks DI-09-03 (Warning system for disasters), and AR-09-04 Dissemination and distribution networks.

Workshop Details
This one day workshop will focus on advanced communication systems critical to the dissemination of timely disaster alerts, and to assist in disaster and post-disaster management. Discussions will include approaches to communications technologies in both developed countries as well as in bandwidth limited situations of developing countries. Key representatives from industry, academia, and government will be providing invited talks on these and related issues that impact GEOSS implementation for disaster mitigation and relief.

Session 1: Opening
8:00: Welcome and Opening
Doug Zuckerman, Telcordia Technologies

8:15: Logistics and Introduction to Workshop Objectives
Al Gasiewski, University of Colorado

8:30: Around the Room Introductions
Francoise Pearlm an, IEEE

Session 2: GEOSS and Disaster Management
8:45: Introduction to GEOSS and Approach to Disaster Management – GEONET
Jay Pearlm an, IEEE

9:10: Outcome from GEOSS Workshop XXX – Disaster Management and Humanitarian Assistance (Kampala)
Ian Downman, International Society for Photogrammetry and Remote Sensing (via WEBEX, telephone)

9:25: Common Alert Protocol (CAP)
Tom VonDeak, NASA (via WEBEX, telephone)

9:40: The GEOSS Infrastructure and Communication Mechanisms, GEONETcast
George Jungbluth, National Oceanographic and Atmospheric Administration – NOAA

Session 3: Communication Systems During and After Disasters
10:05: Examples of Warning Systems (GEO task DI-09-03) – Fire Warning and Tsunami
Stuart Weinstein, NOAA Tsunami Warning Center

10:30: Coffee Break

11:00: Experiences with Communication Networks for First Responders
John Coloe, Fire Department of New York City (FDNY)
Lt. John Titchen, 14th Coast Guard District, Honolulu

12:00: Amateur Radio Communications for Sustaining Communications Post Disasters
Kevin Bogan, AHEQO; ARRL Pacific Section Emergency Coordinator

12:30: Lunch

Session 4: Communication Strategies for Developing Countries
13:30: Special Needs for Communications in Developing Countries and Other Special Situations
Mehmet Ulem a, Manhattan College

14:00: Cell Phone based Networks
Ian Akyildiz, Georgia Institute of Technology

14:30: PDA and Small Computers
Markus Hoffman, Alcatel Lucent

15:00: Ad Hoc Communications Network Strategies
Tim Brown, University of Colorado

15:30: Discussion and Coffee Break

Session 5: Breakout Groups - Moderator: Mehmet Ulem a, Manhattan College

16:00: Charter to Breakout Groups: Al Gasiewski, University of Colorado

16:15: Breakout Groups
A. GEOSS and Disaster Management
B. Communication Systems during and after Disasters
C. Communication Strategies for Developing Countries

17:30: Reports of Breakouts and Panel

Session 6: Closing
17:45: Conclusions and Workshop Summary
Doug Zuckerman, Telcordia Technologies
Al Gasiewski, University of Colorado

18:00: Workshop Adjourned
A common theme of interest and passion for young professionals is a compelling desire to improve our world, contribute to society, and benefit humanity. The current generation of students, young professionals, and women are driven to join organizations and volunteer their time in support of these worthy activities. The GOLD panel session will bring together interested individuals and several humanitarian organizations to discuss opportunities for humanitarian engineering outreach activities. The goal is to inform attendees about a variety of humanitarian engineering opportunities available, and how communication technology has served the humanity. The session will also inspire people, who will invent the future, to bring vision of utilizing communication technology for humanitarian works closer to the young professionals and students.

**Door Prizes - 5 IEEE Beach Towels**
18:30 Networking with Light Refreshment
19:00 Panel Session on Communication Technology Serving Humanity
20:30 Conclusion

**Panel Session on Communication Technology Serving Humanity**
Chair
Soon Wan, IEEE Member (GOLD), IEEE MGA Committee Past Chair
Co-Chair
Angela Yingjun Zhang, IEEE Member (GOLD), IEEE Communication Society GOLD Coordinator

**IEEE GRADUATES OF THE LAST DECADE (GOLD) SESSION**

**Communication Technology Serving Humanity**

**Monday, 30 November 2009 • 18:30 – 21:00 • Location: Tapa Ballroom 3**

**Panel Organizer**

- **Robert de Marca**
  - IEEE Fellow, Chair of IEEE Humanitarian Technology Challenge

**Humanitarian Technology and IEEE**

IEEE members are involved in many activities using technology to improve human conditions, worldwide. Recently, the IEEE has established a wiki-based website, the Humanitarian Technology Network (www.ieeehumanitarian.org) to record these activities and facilitate networking of interested parties. The IEEE Foundation has established a special Humanitarian Technology Fund to collect and distribute money for worthwhile causes. In addition, the IEEE has partnered with the United Nations Foundation to select three key humanitarian challenges where application of new or improved technologies could improve conditions in developing countries. That project is called the Humanitarian Technology Challenge (www.ieee.org/go/htc). This presentation will summarize the status of these efforts, with particular focus on the HTC project and progress being made in solving the three selected challenges. Continued and increased involvement of GOLD and student members in IEEE’s Humanitarian Technology activities is strongly encouraged.

**Robert Walp**

- **IEEE Life Fellow, Chair of Humanitarian Communications Technology Committee**

**Satellite Communications in Remote Communities**

Robert M. Walp will examine the early use of satellite communications to connect isolated remote communities with urban centers for medicine, education, commercial and social purposes, as seen by one participant in the process. The evolutionary development of this technology, comprising random and unexpected events and leading to commercial operational systems, will be covered from a personal viewpoint.

**Mehmet Ulema**

- **IEEE Senior Member**
  - IEEE GLOBECOM 2009 Technical Program Chair

**GAP: Improving Access to Worldwide Telecom Network**

Telecommunications services are not equally available to everyone in the world. This disparity, often called the “Digital Divide,” receives much talk, but little progress has been made. This talk will focus on the economic aspects and discuss how subsidy funds can be directed to the consumers. When implemented, this concept provides consumers with the purchasing power needed to buy services; thereby it emulates conditions in an affluent region and attracts entrepreneurs to supply services in response to demand. This project requires input from many disciplines. There will be technical analyses of existing and new portions of the net, but there will also be much economic analysis, model building and simulation. Selected representative topics include service needs according to region, technologies and their applications, skills, essential human capital, regulatory and governmental policies, etc.

**WOMEN IN COMMUNICATIONS ENGINEERING**

**Career Opportunities in the Future Communications and Networking Environment**

**Thursday, 3 December 2009 • 16:30 – 18:30 • Location: South Pacific Ballroom 4**

**Sponsored by ComSoc Women in Communications Engineering Ad Hoc Committee**

Going on the job market? Need some advice on career development in the field?
Join us at this career panel where the distinguished panelists will address some intimate issues on career development. It is a great opportunity to learn directly from those experienced and highly achieved in the field about the increasingly diverse career paths, the various career options, industry and technology trends, and insights into the different communications engineering careers.

The panelists will address some frequently asked questions such as

- Should I go into academia or industry?
- What are the pros and cons?
- How do I decide?
- How does one balance career and family life, especially during child rearing age?
- How does one get recognized and promoted, or even better, break the glass ceiling?
- What are the effective networking tactics and opportunities?

These and many other related questions will be addressed in the first half of the panel followed by an open discussion with advice regarding helpful resources, career considerations, and best practices in achieving professional success. All are invited to attend this special panel for valuable discussion on career and professional development. It will also give you the opportunity to connect with other men and women who share the same research interests, attend the same conferences and face the same career challenges.
Our technical committees define and implement the technical directions of the Society. As a fundamental element of the Society, all members are invited and encouraged to participate in one or more of its technical committees. Throughout the year, these committees also play a major role in determining which events (conferences, workshops, etc.) are technically co-sponsored by ComSoc. Many of these committees - networks of professionals with common interests in communications - will be meeting at IEEE GLOBECOM 2009.

Enclosed in your registration bag is a committee meetings schedule, which includes technical committees. Schedules will also be available at the registration desk. We look forward to your participation.

### Technical Committees

**Ad Hoc & Sensor Networks**
The Committee will serve as ComSoc’s focal point in the area of wireless ad hoc and sensor networks technologies, stimulating and organizing leading-edge wireless ad hoc and sensor networks symposia, workshops, sessions and tutorials at ComSoc conferences. It will also serve as a proactive facilitator in the dissemination of evolving wireless ad hoc and sensor networking standards.

**Cognitive Networks**
The goal of TCCN is to provide a platform for its members in particular, and the cognitive networking research, development, policy making and standardization community in general, to interact and exchange technical ideas to identify major challenges and also derive solutions in the development of cognitive networking technologies.

**Communications & Information Security**
This committee will promote security of all types of communication networks and forms of information transported by them and through them, end to end. Our security interests start from the network physical layer and they end on the end user application layer. The committee will support conferences, symposia, technical sessions, publications, etc., where information is exchanged within the scope of interest of the TC.

**Communications Quality and Reliability**
This committee focuses on and advocates worldwide communications quality and reliability on behalf of, and within, the Communications Society. CQR serves as the catalyst for global awareness and the exchange of information relative to technical and management-related aspects of communications quality and reliability.

**Communications Software**
The mission of this committee is to advance the state of the art in communications software and its various aspects and applications. It serves as the major forum for discussion among communications software professionals in both of the communications and computer industries.

**Communications Switching & Routing**
The objective of this committee is to sponsor publications, conference technical sessions, workshops and topical meetings and discussions in the theory and applications of information switching. Specific areas include, but are not limited to theory, architecture, traffic, performance, signaling protocol and networks, call and mobility control, services and features, planning, economic factors and management of switching systems.

**Communications Systems Integration & Modeling**
This committee is concerned with the systems disciplines and modeling tools that facilitate the integration of information-transport equipment, subsystems, and networks into communications systems. The committee particularly addresses computer-aided modeling of integrated subsystems to answer architectural and performance questions.

**Communication Theory**
This committee sponsors conference sessions, workshops, tutorials, as well as promoting and reviewing papers in the broad area of communication theory, with emphasis on applications to practical systems. The technical content of these sessions and papers focuses on the analytical and theoretical aspects of many diverse areas that include modulation, coding, synchronization, equalization, signal processing and neural networks, transmission over all media, source and channel coding, spread spectrum and multiple access, data communications, and communication networks.

**Data Storage**
This committee (DS) promotes advances in the state of the art of coding and signal processing to enhance digital data storage systems, in order to achieve high storage densities, fast access, and low error rates. The committee is also interested in VLSI implementations of read/write channel electronics.

**Enterprise Networking**
This Committee focuses on "end-to-end" solutions, addressing topics such as re-engineering of business processes around computers and communications, end-to-end network design and integration of subsystems, interconnection and interoperability of all components of an enterprise network, including Local/Wide/Global Area Networks, networked applications and services. It addresses the needs of vertical markets, such as healthcare, finance and telecommunications with respect to functional (e.g., VPNs and ERP) as well as non-functional (e.g., security and management) requirements.

**High-Speed Networking**
This committee promotes interest within and outside the Communications Society on the emerging applications and architectural solutions for high-speed networks. A primary goal is to serve as a focal point for activities in high performance networking by participating in and sponsoring conferences and workshops; encouraging publications, fostering discussion; and providing education on the utility of high-speed networks and possible architectural alternatives required for optimum infrastructure.

**Information Infrastructure**
This committee identifies and exchanges knowledge on issues related to National Information Infrastructure (NII) and Global Information Infrastructure (GII). It stimulates interdisciplinary conferences, sessions, workshops, publications, and standards activities, and offers leadership and support to the Communications Society in furthering its own use of the national and global information infrastructures.

**Internet**
This committee is a joint committee of the Internet Society and the IEEE Communications Society for stimulating interdisciplinary exchanges and applications of state of the art communications and related technologies to Internet infrastructure and services. The committee contributes to the emergence of an ubiquitous, multimedia, and high-performance Internet serving large segments of the world’s population.
Multimedia Communications
This committee examines systems, applications, services and techniques in which two or more media are used in the same session. These media include, but are not restricted to, voice, video, image, music, data, and executable code. The scope of the committee includes conversational, presentation, and transactional applications and the underlying networking systems to support them.

Network Operations & Management
This committee (C NOM ) focuses on network and service operations and management. It encourages the exchange of information on the operational and technical management aspects of public and private networks for voice, data, image, and video, and organizes and sponsors publications and discussions of these topics. Specific technical interests include automation of network operations, customer network management and control, knowledge-based technologies, real-time management of networks, network-operations architecture, service management, and end-to-end management across several jurisdictional boundaries.

Optical Networking
The committee will serve as ComSoc's focal point in the area of optical networking technologies and play an active role in stimulating/organizing leading-edge optical networking symposia, workshops, sessions and tutorials serving OFC and other premier M&C venues. ONTC will also serve as a proactive facilitator in the dissemination of evolving optical networking standards by working closely with standards forums such as OIF, IETF, and ITU/T1.

Power Line Communications
The Committee sponsors conference sessions, special issues, workshops, tutorials, and promotes the dissemination of technical information in the broad area of communications over power lines. Our primary goal is to serve as a focal point for all activities in the area of power line communications.

Radio Communications
This committee sponsors and promotes technical papers, workshops, and tutorials on the engineering aspects of communications systems, equipment, and operation in which electromagnetic transmission through space near the earth’s surface is the dominant factor. Specifically included are systems in which the transmission follows the surface or takes place within the atmosphere of the earth. Technologies are considered for point-to-point, point to multipoint, mobile radio, and personal communications radio access. Commercial band broadcasting and space communications are outside the scope of the Committee.

Satellite & Space Communications
This committee facilitates technical exchange in the field of satellite and space communications and maintains a keen interest in the development and maintenance of standards in this area. It explores the evolution of new satellite and space-based systems and the application of new and emerging technologies.

Signal Processing & Communications Electronics
This committee (SPCE) sponsors papers, participates in the organization of conferences, and promotes technical workshops on those aspects of communications that pertain to the innovation, development and application of algorithms and electronic and photonic devices or subsystems for generation, processing, storage, transmission, recovery, and presentation of communications signals. In so doing, the committee also has as a goal the professional development of committee members and other practitioners that work in the above areas.

Tactical Communications & Operations
The mission of this committee is to sponsor conferences, workshops, technical sessions, publications, professional meetings, and standards on all aspects of tactical communications and operational situation management in military, homeland defense, and disaster recovery application areas. It provides a forum for members to exchange ideas, techniques, and applications, and share experience among researchers and engineers. Its areas of interest include military communication infrastructures including tactical radio, landline, mobile and space communications; advanced battlespace command and control models, including C4ISR, net-centric operations, asymmetric warfare, special operations command; surveillance, monitoring and control, including target identification, tracking and signal intelligence; homeland security management infrastructures, models, and architectures; disaster rescue, recovery and support missions; operational situation management, including situation awareness, decision support, information fusion, situation control, situation prediction, and situation management architectures and engineering solutions; semantic information processing, including semantic modeling, ontologies, knowledge representation, semantic modeling languages, tools, and platforms.

Transmission, Access, & Optical Systems
This committee sponsors and organizes papers, conference sessions, workshops and standards development relating to both optical and metallic guided media transmission and access systems for the transport of speech, data, and visual information of any bandwidth. Specific areas of interest include; testing and performance of analog and digitally transmitted signals; systems and equipment for subscriber access over fiber, coaxial cable, and twisted copper pairs; analog and digital subscriber lines over wires and interfaces to wireless media; inductive coordination and electrical protection of wired media; network synchronization; and development of IEEE-oriented standards.

Wireless Communications
The mission of the committee TCPC is to sponsor publications, conferences, technical sessions, workshops, and other information exchanges on architectures, applications, systems, terminals and technologies to provide personal, location-independent communication and computing in voice, data and visual media. Its areas of interest include techniques for achieving portability, ubiquity and transparency using wireless networks ranging from microcellular to satellite, and wired networks ranging from narrow to broadband.
AWARDS LUNCHEON

Celebrate with your colleagues at this biannual event honoring the achievements of the 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.

WELCOME RECEPTION

The Welcome Reception is your chance to connect with peers and presenters in a relaxed, informal setting—and the organizing committee’s chance to celebrate your arrival at IEEE GLOBECOM 2009. Open to all conference attendees and accompanying guests.

ADDITIONAL TICKETS: $60.00 per person.

CONFERENCE BANQUET (LUAU)

Join the IEEE GLOBECOM 2009 organizing committee for a delightful evening as we celebrate the sights and sounds of Hawaii under the sky. This event is included with the full conference registration.

ADDITIONAL TICKETS: $120.00 per person.

ISLAND ACTIVITIES AND TOUR RESERVATIONS

IEEE Island Information Desk for IEEE GLOBECOM 2009 Attendees & their Guests

IEEE has made exclusive arrangements with Hawaii Meeting Builders (HMB) to provide advance “web reservations” and on-site assistance to its attendees for seamless tour, activity and local area expertise during your stay in the Hawaiian Islands. HMB’s local travel experts will be on-site to reconfirm advance web reservations you may have made on the “IEEE Advance Activity and Tour Website” (www.ieeehawaii.com) and also to assist you with any new on-site tour arrangements.

Island Activity, Tour Reservation and Information Desk Location:
Adjacent to Meeting Information Desk in the conference registration area (Coral Lounge / Mid Pacific Center).

Island Activity, Tour Reservation & Information Desk Hours:
Monday, 30 November 7:30 – 17:00
Tuesday, 1 December 7:30 – 19:00
Wednesday, 2 December 7:30 – 16:00
Thursday, 3 December 7:30 – 16:00
Friday, 4 December 8:00 – 14:00

Payment Methods:
Visa, MasterCard, American Express, Cash & Traveler’s Checks

Stop by and visit. HMB will answer your questions and provide general information about Oahu and the Hawaiian Islands to help you and your guests make the best use of your time during your stay. They will be more than happy to assist you!
IEEE GLOBECOM 2009 Badges and Tickets
IEEE GLOBECOM 2009 Badges must be worn at all times and are necessary for entrance into all IEEE GLOBECOM sessions. Tickets are required for the Awards Luncheon and the Conference Luau.

Conference Location
The conference will be held at the Hilton Hawaiian Village, which offers the perfect mix of exceptional resort accommodations and classic Hawaiian hospitality. Discover over 90 shops and boutiques and a diverse, international selection of restaurants. The resort’s beachfront Super Pool is the largest on the island and, on Friday night, it becomes the stage for a celebration of Hawaiian culture and entertainment, ending with a spectacular fireworks show!

The conference will take place in the following buildings: Mid Pacific Conference Center, Kalia Executive Conference Center, Tapa Conference Center, and Rainbow Suite.

Registration
The Registration will take place in the Coral Lobby / Mid Pacific Conference Center of the Hilton. The Conference Information Desk is adjacent to the Registration Area. All attendees and accompanying guests must register and receive a conference badge in order to participate in conference activities.

Registration and Information Desk Hours:

Sunday, 29 November 15:00 – 18:00
Monday, 30 November 7:30 – 17:00
Tuesday, 1 December 7:30 – 19:00
Wednesday, 2 December 7:30 – 16:00
Thursday, 3 December 7:30 – 16:00
Friday, 4 December 8:00 – 14:00

Conference Meals
Awards Luncheon – Coral Ballroom 3
Tuesday, 1 December 2009 • 12:15 – 14:00 (Included with full registration)

Welcome Reception & EXPO Opening – Coral Ballroom
Tuesday, 1 December 2009 • 19:00 – 21:30 (Included with conference registration fee)

Conference Luau – Lagoon Green
Wednesday, 2 December 2009 • 19:00 – 21:30 (Included with full registration)

IEEE GLOBECOM/EXPO 2009
IEEE GLOBECOM/EXPO 2009 is located in the Hilton Coral Ballroom 4 & 5 / Mid Pacific Conference Center.

The EXPO Hall Hours:
Tuesday, 1 December 19:00 – 21:00
Wednesday, 2 December 10:00 – 18:00
Thursday, 3 December 10:00 – 18:00

Coffee Breaks
Coffee breaks will be held in the Exhibit Hall / Coral Ballroom 5 on Wednesday 2 December and Thursday, 3 December at 9:45 – 10:15 and 16:00 – 16:30. Don’t miss the opportunity to network and win special prizes. You must be present to win.

Internet Access
Internet Stations are located in the Coral Lounge and Exhibit Hall and will be open during registration hours. IEEE GLOBECOM 2009 will offer free wireless access. Additionally, guest rooms at the hotel have data ports and are equipped with high-speed internet access for an additional charge from the hotel.

Speaker Ready Room
An area of the Coral Lounge is set aside for the Speaker Ready Room. The area is available for authors to rehearse Monday – Friday from 7:00 – 17:00 for any presenters who wish to rehearse and prepare for their presentations.

Student Travel Grants
Student Travel Grant Recipients can pick up their certificates at the Registration Desk during registration hours.

General Attendee Information
The full-service 24-Hour Xerox® Business Services Center at the Hilton Hawaiian Village is located on the Ground Floor of Diamond Head Tower.

The Post Office is open Monday – Saturday from 8:00 – 16:00 and closed daily from 12:00 – 13:00.

Companion Hospitality
Companions are invited to begin their daily activities in the Companion Hospitality room with coffee and a pastry. Suite #430 in the Tapa Tower has been assigned as the Guest Hospitality Suite. Meet your friends prior to one of the daily tours or to make your plans for the day.

Stop by and receive a gift reserved for each companion. In addition, we will have daily door prize drawings.

The room is open Monday – Thursday from 8:00 – 16:00. Please note that this venue is for companions only. Your conference badge will be required for admittance.

Language
All Conference Sessions and Publications will be in English.

Tipping
This is part of the American way of life, based on the principle that you should pay for any special service.

Here are some examples: bartenders: 10%-15%; bellhops: at least $3.50 per bag or $5-$8 for a lot of baggage; taxi drivers: 15% of the fare; airport attendants: $3.50 per bag or $5-$8 for a lot of baggage; valet parking attendants: $2.

Cell Phones/PDAs/Laptops/Beepers
Please be cognizant and respectful of your fellow conference attendees and speakers. During sessions, please lower the volume on your electronic devices and put your phones on vibrate mode.

Evaluation Form
Please be sure to take the time to fill out the forms. We value your feedback. You will receive an email after the conference for the overall evaluation of the event.

TRAVELING AROUND HONOLULU
Traveling to Hawaii is as close as an American can get to visiting another country while staying within the United States. Oahu—where Honolulu and Waikiki are—is the third largest Hawaiian island and has 75% of the state’s population. Honolulu is the perfect place to experience the state’s indigenous culture, the hundred years of immigration that resulted in today’s blended society and the tradition of aloha. The museums and historic and cultural sites will ground you, at least a bit, in Hawaii history. The widest range of restaurants as well as the best nightlife scene in the Islands is here, too.

What can I do on Oahu?
• Take a surfing lesson on Waikiki Beach
• Watch world-class surfers charge the big waves on the North Shore
• Pay your respects at the USS Arizona Memorial at Pearl Harbor
• Marvel at the American Florentine architecture of Iolani Palace
• Dress up and experience downtown nightlife and art galleries

For more information, visit
ASTRI Booth Number: 404
Website: www.astri.org

The Hong Kong Applied Science and Technology Research Institute (ASTRI) was founded by the Government of Hong Kong Special Administrative Region in 2000 with a mission of enhancing Hong Kong’s competitiveness in technology-based industries through applied research.

In April 2006, ASTRI was designated the Hong Kong Research and Development Centre for Information and Communications Technologies by the Government with special goals to perform leading-edge R&D for technology transfer to industry, develop much needed technological human resources and act as a focal point bringing together industry and university R&D assets.

Since its inception, ASTRI has been delivering world-class technologies and customer-focused R&D catering to the needs of industry. Its R&D efforts traverse five intent and areas, namely Communications Technologies, Enterprise & Consumer Electronics, IC Designs, Material & Packaging Technologies and Bio-medical Electronics.

Looking ahead, ASTRI will strive to become one of the best and most influential R&D centers in the region.

Cambridge University Press
Booth Number: 201
Website: www.cambridge.org/us


IEEE ICC 2010
Booth Number: IEEE Pavilion Table #1
Website: www.ieee-icc.org/2010

Since 1965, the International Conference on Communications (ICC) has been one the flagship conferences of the Communications Society, and after 45 years Africa will be proud to host this event for the first time on African soil. In keeping with the conference theme of “Communications: Accelerating Growth and Development,” this conference will bring together international experts in business, government, and academia, who would lead to intensify tomorrow’s inventions and innovations in order to accelerate economic growth and improve the quality of life for all. The conference will be held 23 – 27 May 2010 in the beautiful mother city of Cape Town at the Cape Town International Convention Centre (CTICC) and the Minister of Science and Technology, as Conference General Chair with the local organizing committee, promises to make this a truly unique African experience.

IEEE ICC 2011
Booth Number: IEEE Pavilion Table #2
Website: www.ieee-icc.org/2011

IEEE ICC 2011 will be held in Kyoto, Japan from 5 – 9 June. Its high quality program consists of major symposia,keynotes, panel discussions, workshops, tutorials, and exhibitions. Attendees will have a unique opportunity to experience IEEE ICC for the first time in Japan.

IEEE Corporate Strategy & Communications Booth Number: IEEE Pavilion Table #3
Website: www.ieee.org

IEEE is the world’s largest professional association advancing innovation and technological excellence for the benefit of humanity. IEEE and its members inspire a global community to innovate for a better tomorrow through its highly-cited publications, conferences, technology standards, and professional and educational activities. IEEE is the trusted “voice” for engineering, computing and technology information around the globe.

IEEE GLOBECOM 2010
Booth Number: IEEE Pavilion Table #7
Website: www.ieee-globecom.org/2010

IEEE GLOBECOM 2010 will be held 6 – 9 December in Miami, Florida. Its high quality technical conference that will have technical paper sessions, tutorials, workshops and panels with the latest breakthroughs and its EXPO will appeal to top industry, academic and government leaders and practitioners through a Design & Developers Forum, Access Networks Forum and Enterprise Networking Forum, as well as a CEO Forum and Keynotes from top leaders in the field. Please join us in beautiful Miami to network with colleagues as well as enjoy the nice weather and sunshine on the beach!

IEEE GLOBECOM 2011
Booth Number: IEEE Pavilion Table #5
Website: www.ieee-globecom.org/2011

IEEE GLOBECOM 2011 will be held in Houston, Texas from 5 – 9 December. As one of the Communications Society’s flagship conferences, it provides a full program of technical and professional activities spanning the range of hot topics in voice, data, image and multimedia communications. Tutorials, workshops, and business forums will be presenting all the latest research and vital information on a variety of communication subject areas.

IEEE Standards Association Booth Number: IEEE Pavilion Table #6
Website: http://standards.ieee.org

The IEEE Standards Association, a globally recognized standards-setting body, develops consensus standards through an open process that engages industry and brings together a broad stakeholder community. IEEE standards set specifications and best practices based on current scientific and technological knowledge. The IEEE-SA has a portfolio of over 900 active standards and more than 400 standards under development.

The Institute of Electronics Information and Communication Engineers Booth Number: 202
Website: www.ieice.org/eng/index.html

The IEICE (The Institute of Electronics, Information and Communication Engineers) was founded in May 1917, and is Japan’s largest professional engineering society, with over 35,000 affiliated members. The society has an international reputation as a leading force in the investigation and exchange of Knowledge on the science and technology of electronics, information and communication. The four English-language Transactions of the IEICE publish research which has made, and continues to make, significant contributions to the progress of technology and the development of industries in these fields.

These Transactions were first published in 1976 and contain original peer-reviewed papers in the field of “Fundamentals of Electronics, Communications and Computer Science,” “Communications,” “Electronics,” and “Information and Systems.” The number of contributions has doubled in the past decade, and over 75 percent of regular papers now come from overseas (especially Asia).

PIMRC 2010
Booth Number: IEEE Pavilion Table #8
Website: www.ieee-pimrc.org/2010

The IEEE Annual Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) is one of the two main conferences of the IEEE Communications Society specializing in wireless and mobile communications. The 21st Edition of this conference, PIMRC 2010, will be held in Istanbul, Turkey, 26 – 30 September 2010. The deadline for submission of papers, tutorials, and workshops is 1 March 2010.

Stop by the table reserved for PIMRC 2010 at the IEEE Pavilion and pick-up a gift along with a copy of the Call for Papers, and information about Istanbul and Turkey.

Springer
Booth Number: 103
Website: www.springer.com

Springer is a leading publisher of books, journals and electronic products. Visit us at booth #101 to purchase our latest publications at a 20% conference discount. Our publishers are available to answer any questions you may have. Visit springer.com/engineering for more information on our latest products.

Telcordia Technologies
Booth Number: 104
Website: 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 communications providers worldwide deploy innovative and profitable new services via any network or device while helping carriers aggressively reduce costs and grow revenues.

WIE (Women in Engineering)
Booth Number: IEEE Pavilion Table #4
Website: www.ieee.org/women

WIE’s core purpose is to facilitate the development of activities that promote the entry into and the retention of women in engineering, computing, technology, and the sciences; and enhance the careers of women in the profession. Come and Network with successful women in your field and get support from a worldwide community of professionals.

EXHIBITORS

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Ride the Wave to Global Connectivity
IEEE Communications Society and IEEE GLOBECOM 2009 Executive Committee would like to thank our patrons for supporting IEEE GLOBECOM 2009.
CALL FOR PAPERS AND PROPOSALS

IEEE GLOBECOM 2010 is the flagship conference of IEEE Communications Society, which is to be held in Miami during 6 – 10 December 2010. We invite you to submit your original technical papers and tutorial and workshop proposals to this event.

The following 11 symposia (with emails of contact points) are featured:

<table>
<thead>
<tr>
<th>Ad Hoc and Sensor Networking</th>
<th>Contact: <a href="mailto:hossam@cs.queensu.ca">hossam@cs.queensu.ca</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chairs: Hossam Hassanein, Xiaohua Jia, Sirisha Medidi, Cheng Li</td>
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<tr>
<td>Communications and Systems Security</td>
<td>Contact: <a href="mailto:yingfei@hawaii.edu">yingfei@hawaii.edu</a></td>
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<tr>
<td>Chairs: Yingfei Dong, Nidal Nasser, Yanchao Zhang, Kejie Lu</td>
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<tr>
<td>Communications QoS, Reliability and Modeling</td>
<td>Contact: <a href="mailto:cgwang@ieee.org">cgwang@ieee.org</a></td>
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<tr>
<td>Chairs: Hideaki Yoshino, Michael Devetsikiotis, Chonggang Wang</td>
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<tr>
<td>Communication Theory</td>
<td>Contact: <a href="mailto:mdr@byu.edu">mdr@byu.edu</a></td>
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<tr>
<td>Chairs: Michael Rice, Vahid Tarokh, Shuguang Cui</td>
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<tr>
<td>Next-Generation Networking</td>
<td>Contact: <a href="mailto:ngn10-tpcchairs@cs.northwestern.edu">ngn10-tpcchairs@cs.northwestern.edu</a></td>
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<tr>
<td>Chairs: Yan Chen, Zhenhai Duan, Nasir Ghani, Wojciech Kobacinski</td>
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<tr>
<td>Communication Software, Services and Multimedia Applications</td>
<td>Contact: <a href="mailto:joelr@ieee.org">joelr@ieee.org</a></td>
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<tr>
<td>Chairs: Bin Wei, Joel Rodrigues, Mohammad S. Obaidat, John Buford</td>
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<tr>
<td>Optical Networks and Systems</td>
<td>Contact: <a href="mailto:rouskas@ncsu.edu">rouskas@ncsu.edu</a></td>
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<tr>
<td>Chairs: George Rouskas, Filippo Cugini, Ahmed E. Kamal, Jun Zheng</td>
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<tr>
<td>Signal Processing for Communications</td>
<td>Contact: <a href="mailto:Hung.H.Nguyen@aero.org">Hung.H.Nguyen@aero.org</a></td>
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<tr>
<td>Chairs: Hung Nguyen, Tomohiko Taniguchi, Dilip Sarkar, Zhu Liu</td>
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<tr>
<td>Wireless Communications</td>
<td>Contact: <a href="mailto:jalel.ben-othman@prism.uvsq.fr">jalel.ben-othman@prism.uvsq.fr</a></td>
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<tr>
<td>Chairs: Jalel Ben-Othman, Jun Cai, Andrea Conti, Jianwei Huang, Sana Star, Liqing Yang</td>
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<tr>
<td>Wireless Networking</td>
<td>Contact: <a href="mailto:sci@engr.unl.edu">sci@engr.unl.edu</a></td>
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<tr>
<td>Chairs: Song Ci, Lin Cai, Abbas Jamalipour, Linda Jiang Xie</td>
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<tr>
<td>Selected Areas in Communications</td>
<td>Contact: <a href="mailto:bregni@elet.polimi.it">bregni@elet.polimi.it</a></td>
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<tr>
<td>Chairs: Stefano Bregni, Haitao (Tony) Xia, Igor Bisio, Francisco Canete, Linda Doyle</td>
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All general questions regarding IEEE GLOBECOM 2010 symposia can be addressed to Qian Zhang (qianzh@cs.ust.hk) directly. All questions regarding panels can be addressed to Jin Li (jinl@microsoft.com).

The organizers of IEEE GLOBECOM 2010 as well as our attendees expect accepted papers to be presented at the conference. IEEE reserves the right to exclude a paper from distribution after the conference (e.g., removal from IEEE Xplore) if the paper is not presented at the conference.

FREE TUTORIALS

IEEE GLOBECOM 2010 opens all tutorial sessions to conference attendees FREE of charge. The Tutorial/lecture proposals should be submitted via EDA, and all questions can be addressed to Khaled El-Maleh (kelmaleh@qualcomm.com), and the workshop proposals should be submitted to Xiaobo Zhou (zbo@cs.uccs.edu) directly.

IMPORTANT DATES

| Paper Submission: 15 March 2010 | Paper Acceptance: 1 July 2010 |

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