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## IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS

ON COMMUNICATIONS
INDUSTRY FORUM & EXHIBITION









Tuesday, June 12, 2012 • Issue 2

## ••• Greetings IEEE ICC 2012 Participants •••

Colleagues and friends. On behalf of the IEEE ICC 2012 team, welcome to our nation's capital.

With many first innovations in 2012; such the converged devices with Near Field, Wi-Fi and LTE, this paperless conference that covers all of these interesting topics is a demonstration of an extraordinary partnership that developed between industry and academia over the years, and your presence is a good proof of that.

I hope this conference will give us the opportunity to share our innovative ideas and set the stage for a brighter future.

I wish you have a wonderful time.



Chers collègues et amis. Au nom de l'équipe ICC2012 bienvenue à notre capitale nationale.

2012 a été marquée par de nombreuses innovations premières, dont la convergence des fonctionnalités Near Field, Wi-Fi et LTE sur les appareils intelligents, cette conférence sans papier qui couvre l'ensemble de ces sujets intéressants est une démonstration du partenariat extraordinaire qui c'est développé entre l'industrie et le milieu academique, et votre présence ici est une bonne preuve de cela.

J'espère que cette conférence nous donnera l'occasion de partager nos idées inovative, et préparer le terrain pour un future plus meilleur.

Je vous souhaite des moments merveilleux au cours des deux prochains jours.

Ibrahim Gedeon CTO, TELUS IEEE ICC 2012 General Chair

## ••• Welcome from the IEEE Communications Society President •••

It is a pleasure to welcome you to the IEEE International Conference on Communications. The Communications Society is proud to host its premier event in Canada's Capital Ottawa, known for its engineering achievements and spectular scenery. On behalf of all of us, our sincere thanks to Dr. Ibrahim Gedeon and his team for their hard work in organizing this conference.

2012 commemorates the 60th anniversary of the IEEE Communications Society which has 50,000 members and includes 200 international chapters. It has working relationship with an additional 30 international societies which extends our global reach to another 500,000 engineers, scientist and industry professional.

I wish you pleasant deliberations over the next several days.



C'est un grand plaisir de vous accueillir à la Conférence Internationale de l'IEEE sur les communications. La IEEE Société des Communications est fier d'accueillir sa manifestation de premier plan dans la capitale du Canada Ottawa, connu pour ses réalisations d'ingénierie et ses beaux paysages.

Au nom de nous tous, nos remerciements les plus sincères au Dr Ibrahim Gedeon et son équipe pour leur excellent travail dans l'organisation de cette conférence.

2012 commémore le 60e anniversaire de la IEEE Société des Communications, qui compte plus de 50.000 membres et comprend 200 chapitres internationaux. On a des relations avec plus de 30 sociétés internationales qui étend notre portée mondiale à un autre 500 000 ingénieurs, scientifiques et professionnels de l'industrie.

Je vous souhaite des délibérations agréables au cours des prochains jours ainsi q'un beau séjour au Canada et Ottawa en particulier.

Vijay K. Bhargava President IEEE Communications Society

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## · · · Happening Today at IEEE ICC 2012 · · ·

08:00 - 10:30

Welcome & Opening Session / Canada Hall I (301)/3F

Eros Spadotto, EVP, TELUS Ian F. Akyildiz, Prof, Georgia Tech

10:30 - 10:45

Coffee Break / Canada Hall II&III (302&3)3/F

10:30 - 18:00

Exhibition / Canada Hall II&III (302&3)/3F

10:45 – 12:30 Industry Forums

SA01: Social Networks / 214/2F

INFRA01: Cloud Infrastructure & Networking / 205&7/2F

**Technical Sessions** 

AH01: Localization I / 201/2F

AH02: Delay Tolerant Networks (DTN) / 202/2F AH03: Cognitive Wireless Networks / 203/2F CISS01: Algorithmic Design / 204/2F CISS02: Attack and Defense / 206/2F

CQR01: Network Measurement and Monitoring Techniques / 108/1F

CRN01: Spectrum Sensing I / 105/1F CSS01: Quality of Services / 104/1F CT01: MIMO I / 103/1F

**CT01**: MIMO I / 103/1F **CT02**: LDPC Codes / 106/1F

NGN01: P2P and Content Based Networks I / 102/1F

SA-AN1: Access Networks I / 101/1F

**SPC01:** Channel Estimation, Equalization and Decoding I / 210/2F

**SPC02:** Cognitive Radio Systems / 107/1F

WC01: Multiuser MIMO / 208/2F

WC02: Cooperative Communications: Resource Allocation / 209/2F

WC03: Hybrid ARQ / 215/2F WC04: OFDM / 211/2F

WN01: LTE/WiMAX Networks / 212/2F

WN02: Wireless Sensor Network Design / 213/2F

Poster Sessions / Canada Hall II&III (302&3)/3F

AH-P1: Mobile Ad Hoc and Sensor Networks

**CQR-P1:** Network Measurement and Monitoring Techniques

**CRN-P1:** Spectrum Sensing **ONS-P1:** Optical Networking

SA-SSC-P1: Satellite & Space Communications Systems I

12:30 - 14:00

Awards Luncheon / Confederation [&I] / Westin Hotel/4F

14:00 - 15:45

**Industry Forums** 

INFRA02: Heterogeneous Networks / 205&7/2F

MM01: Cloud Management / 214/2F

**Technical Sessions** 

AH04: Routing I / 201/2F AH05: Security I / 202/2F AH06: Clustering / 203/2F CISS03: Authentication / 204/2F CISS04: Channel Analysis / 206/2F

CQR02: Quality, Scalability and Performance in the Internet I / 108/1F

**CRN02:** Cooperative Spectrum Sensing / 105/1F **CSS02:** Communication Optimization / 104/1F

CT03: Relay I / 103/1F

CT04: Channel Capacity / 106/1F

NGN02: P2P and Content Based Networks II / 102/1F

SA-AN2: Access Networks II / 101/1F

SPC03: Cooperative Communications / 210/2F SPC04: Secured Communications / 107/1F WC05: Space-Time Coding I / 208/2F

**WC06:** Performance Analysis for Relay Systems I / 209/2F

WC07: Energy Efficient Design I / 215/2F

WC08: Dynamic/Opportunistic Spectrum Access / 211/2F

WN03: 802.11 Wireless Networks / 212/2F

WN04: Multicast & Broadcast in Wireless Networks / 213/2F

Poster Sessions / Canada Hall II&III (302&3)/3F AH-P2: Transmission and Multi-hop Forwarding

**CQR-P2:** Quality, Scalability and Performance in the Internet

**CRN-P2:** Performance Modeling and Analysis

SA-SSC-P2: Satellite & Space Communications Systems II

15:45 - 16:15

Coffee Break / Canada Hall II&III (302&3)/3F

16:15 - 18:00

**Industry Forums** 

INFRA03: Network Technologies / 205&7/2F

MM02: Edge Networking / 214/2F

**Technical Sessions** 

AH07: Routing II / 201/2F

AH08: Energy-Efficient Networking Algorithms and Protocols / 202/2F

AH09: Mobile and Vehicular Ad Hoc Networks / 203/2F

CISS05: Infrastructure Security / 204/2F CQR03: TCP/IP Performance / 206/2F

CQR04: Quality and Performance for Network and Services /108/1F

CRN03: Spectrum Sensing II / 105/1F CSS03: Energy Efficiency / 104/1F CT05: Interference Alignment / 103/1F

CT06: Detection, Decoding and Equalization / 106/1F NGN03: Traffic Engineering and Congestion Control / 102/1F SA-SSC1: Satellite & Space Communications / 101/1F SPC05: OFDM and Multi-Carrier Systems I / 210/2F

SPC06: Optimization / 107/1F

WC09: Cooperative Communications: Coding and Diversity / 208/2F

WC10: Cross-Layer Design / 209/2F WC11: Relay Selection / 215/2F

WC12: Interference Management / 211/2F WN05: Medium Access Control / 212/2F

WN06: Cooperative Networking & Network Coding / 213/2F

Poster Sessions / Canada Hall II&III (302&3)/3F

AH-P3: Wireless Network Applications II

**CRN-P3:** Learning, Spectrum Analysis, and Spectrum Access

SA\_EH\_P1: SAC E-Health

WC-P1: Topics in Wireless Communications I

18:00 - 19:30

Dialogue with Industry Leaders / Canada Hall | | (302&3)/3F

Amanda Lang, CBC's Senior Business Correspondent, The National &

Co-host, Lang & O'Leary Exchange Matt Bross, CTO & VC, Huawei

Adam Drobot, CEO, Open Tech Works

Ibrahim Gedeon, CTO, TELUS

Mike Hill, VP, IBM

Vish Nandlall, VP, Ericsson Wen Tong, CTO, Huawei

The Exhibit Hall is a hub of activity, with Poster Sessions, Lunches and refreshment breaks taking place here. The Exhibit Hall provides the perfect place to mix and mingle with colleagues and friends, and to meet your suppliers.

The Exhibit Hall will showcase the best in telecommunications solutions in one place at one time! Visit the booths and be the first to explore an exciting marketplace of services, tools and new technology all designed for your needs.

#### Alcatel-Lucent

#### Booth 302 & 303

#### www.alcatel-lucent.com

The long-trusted partner of service providers, enterprises and governments around the world, Alcatel-Lucent is a leading innovator in the field of networking and communications technology, products and services. The company is home to Bell Labs, one of the world's foremost research centers, responsible for breakthroughs that have shaped the networking and communications industry. Alcatel-Lucent was named one of MIT Technology Review's 2012 Top 50 list of the "World's Most Innovative Companies" for breakthroughs such as LightRadio, which cuts power consumption and operating costs on wireless networks while delivering lightning fast Internet access. Through such innovations, Alcatel-Lucent is making communications more sustainable, more affordable and more accessible as we pursue our mission - Realizing the Potential of a Connected World.

## Algonquin College

#### Booth 413

#### www.algonguincollege.com

Algonquin College of Applied Arts and Technology is a member of Polytechnics Canada leading research-intensive and publicly funded English-language College of Technology. The college is degree-granting and industry-responsive post-secondary education institution committed to education, training, and applied research for industry. Algonquin College located in the National Capital Region and the beautiful Ottawa Valley with campuses in Ottawa, Perth and Pembroke. The college has more than 150 programs effectively combine theory and practice - the best way to prepare for your career.

## Aruba

#### Booth 200

#### www.arubanetworks.com

Aruba Networks is a leading provider of next-generation network access solutions for the mobile enterprise. The company's Mobile Virtual Enterprise (MOVE) architecture unifies wired and wireless network infrastructures into one seamless access solution for corporate headquarters, mobile business professionals, remote workers and guests. This unified approach to access networks dramatically improves productivity and lowers capital and operational costs.

#### **BEEcube**

#### Booth 202

#### www.beecube.com

BEEcube provides High-Speed multiple FPGA prototyping and development platforms targeting

- · Computation/Algorithm prototyping
- High-end Signal Processing applications

#### BEE systems uniquely provide:

- FMC DAC/ADC interfaces
- Symmetrical Honeycomb architecture
- High-speed Gigabit Sting I/O
- Monitoring/Control with Nectar OS
- Industry's largest Trace memory-128GB
- BEEcube Platform Studio (BPS)

# The Borden Ladner Gervais (BLG) Technology Group

#### Booth 206

#### www.blg.com

The Borden Ladner Gervais (BLG) Technology Group helps companies maximize the value of their strategic relationships and the return on their intellectual property investments, both domestically and internationally. We work with companies of all sizes, at all stages of development, providing strategic guidance in the creation, acquisition, use and commercial exploitation of technology. As our sophisticated team works with clients in the digital media, e-commerce, electronics, information technology and telecommunications fields we understand business models and practices in the relevant industries and use our unparalleled legal expertise and business savvy to help clients grow and succeed.

## Canadian Wireless Trade Show (CWTS)

#### Booth 109

#### www.canadianwirelesstradeshow.com

We are the Canadian wireless industry's leading source for networking events offering Exhibitors exclusive access to thousands of customers, industry leaders and decision makers, plus insights into cutting-edge technologies in wireless. The Canadian Wireless Trade Show is taking place on September 12th and 13th at the Direct Energy Centre Hall D in Downtown Toronto Canada. The event takes place annually and is the only one of its kind in Canada. It is the perfect opportunity for exhibitors to market their wireless products and services to over thousands of attendees. Showcase your business and network with customers and industry professionals.

## Cambridge University Press

#### Booth 103

#### www.cambridge.org

The Engineering program of Cambridge University Press publishes titles that meet the needs of engineers at all levels of professional development and range from outstanding introductory textbooks to advanced-level references. Our titles cover areas including Wireless Communications, RF and Microwave Engineering, Communications and Signal Processing, Circuits, and Materials Science.

#### **Carleton University**

#### Booth 403

#### www.carleton.ca

Carleton University, Canada's capital university! Situated on a beautiful campus bordered by the sparkling Rideau River and Canal. Carleton offers 65 programs of study in areas as diverse as public affairs, journalism, film studies, engineering, high technology and international studies. More than 2,000 brilliant professors and staff members constitute a diverse and dedicated team serving 26,000 students. Carleton's creative, interdisciplinary and international approach to research has led to many significant discoveries and creative works in science and technology, business, governance, public policy and the arts.

#### Ciena

#### Booth 409

#### www.ciena.com

Ciena Corporation, the network specialist, offers leading network infrastructure solutions, intelligent software and a comprehensive services practice. Our portfolio of software-centric optical and Ethernet platforms combines network element programmability, operating system commonality and management unification, and Carrier Ethernet-based transformation to enable our customers to change the way they compete. Our solutions form the foundation of many of the largest, most reliable and sophisticated service provider, enterprise, government and research and education networks across the globe.

#### **EION**

#### Booth 404

#### www.eion.com

A global provider of 4G mobile solutions and high speed broadband wireless products, EION Wireless delivers transformational end-to-end wireless solutions with scalability and network management in mind. The company's licensed and unlicensed band products support large Tier-1 service providers, enterprise customers, wireless ISPs, video surveillance applications, remote rural networks, and voice and data backhaul applications to solve last mile challenges. EION's combination of carrier class IP experience, wireless networking skills and security expertise bring highly reliable and secure communications solutions to its clients. EION's TrustLink technology provides interference-free communications for the delivery of broadband multimedia services.

#### Elsevier

#### Booth 203

#### www.elsevier.com/computerscience

Elsevier is a world-leading provider of scientific, technical and medical information products and services. Elsevier publishes more than 80 high-quality peer-reviewed journals covering the entire field of computer science, including Ad Hoc Networks, Computer Communications, Computer Networks, Journal of Network and Computer Applications, Nano Communication Networks and Physical Communication.

#### **EXFO**

#### Booth 208

#### www.exfo.com

EXFO is among the leading providers of next-generation test and service assurance solutions for wireless and wireline network operators and equipment manufacturers in the global telecommunications industry. The company offers innovative solutions for the development, installation, management and maintenance of converged, IP fixed and mobile networks from the core to the edge. Key technologies supported include 3G, 4G/LTE, IMS, Ethernet, OTN, FTTx, and various optical technologies (accounting for an estimated 35% of the portable fiber-optic test market). EXFO has a staff of approximately 1,600 people in 25 countries, supporting more than 2000 telecom customers worldwide.

#### F5

#### Booth 300

#### www.f5.com

F5 Networks is the global leader in Application Delivery Networking (ADN), focused on ensuring the secure, reliable, and fast delivery of applications. F5's flexible architectural framework enables community-driven innovation that helps organizations enhance IT agility and dynamically deliver services that generate true business value. F5's vision of unified application and data delivery offers customers an unprecedented level of choice in how they deploy ADN solutions. It redefines the management of application, server, storage, and network resources, streamlining application delivery and reducing costs. Global enterprise organizations, service and cloud providers, and Web 2.0 content providers trust F5 to keep their business moving forward.

## **IEEE Communications Society (ComSoc)**

#### **Booth in the Registration Area**

#### www.comsoc.org

The IEEE Communications Society, a community of industry professionals with a common interest in advancing all communications technologies, sponsors publications, conferences, educational programs, local activities, and technical committees. Visit our exhibit to join! Copies of our magazines, journals, call for papers and other society information will be on display.

# The Institute of Electronics, Information and Communication Engineers (IEICE)

#### Booth 408

#### www.ieice.org

The IEICE 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.

### **National Instruments**

#### Booth 209

#### www.ni.com

Since 1976, National Instruments has equipped engineers and scientists with tools that accelerate productivity, innovation, and discovery. NI's graphical system design approach to engineering provides an integrated software and hardware platform that speeds the development of any system needing measurement and control. With NI software defined radio (SDR) solutions, engineers can build powerful, flexible systems spanning design to test applications. NI LabVIEW software offers a single platform that abstracts hardware complexities to shorten user learning curves without sacrificing flexibility. The unique integrated flow encompasses heterogeneous multiprocessing, allowing for scalable solutions. NI also delivers a new approach to RF and communications education through affordable SDR solutions by providing opportunities for hands-on implementation and exploration of a working communications system with live signals.

#### **Niksun**

#### Booth 210

#### www.niksun.com

NIKSUN is the recognized worldwide leader in making the Unknown Known. The company develops a highly scalable array of real time and forensics-based cybersecurity and performance management solutions for large enterprises, government & intelligence agencies, service providers and financial services companies. NIKSUN's award winning enterprise solutions deliver unprecedented flexibility and packet capture power. The company's patented real time analysis and recording technology is the industry's most comprehensive solution for secure and reliable network infrastructure and services.

## **Optelian**

#### Booth 400

#### www.optelian.com

Optelian is an international provider of optical transport systems. The company's comprehensive suite of advanced optical solutions are engineered and manufactured in-house, in North America, which enables rapid optical network deployment and expansion, expediting time to market and increasing revenue. Optelian is recognized industry-wide for exceptional product quality, speed of delivery, custom-design capabilities, and superior customer service and support. Optelian's Sales and Marketing organization is located in Marietta, Georgia, with in-house development and manufacturing based in Ottawa, Ontario.

#### **Ottawa Tourism**

## Booth in Registration Area www.ottawatourism.ca

Visit Ottawa Tourism's website to find out what's going on in Canada's Capital Region. Whether you're in town for a few hours or a few days, Ottawa offers a wide variety of activities and experiences. There is so much to see and do here! Check out Canada's history at the Canadian Museum of Civilization, bike ride along the Rideau Canal (a UNESCO World Heritage Site), eat your way through the ByWard Market, and then shop till you drop in the unique shops along Sussex Street. Plus, summer brings festival season to town.

#### **Parliant**

#### Booth 412

#### www.conferencecompanion.com

Winner of two "Best of Shows" at MacWorld Expo, OCRI's Product of the Year Award and MacWorld Magazine's "Best product of the Year, " Parliant has focused its considerable talents on a new industry: Paperless Conferences. Our latest product, Conference Companion (used in the IEEE ICC 2012 conference), efficiently delivers all conference information, improves services, lowers meeting costs, generates advertising revenue and provides better tracking. Parliant provides ubiquitous availability of conference information through Microsoft and Apple desktops and laptops plus mobile devices from Apple, BlackBerry and Android.

## Research In Motion (RIM)

#### Booth 100

#### www.blackberry.com

Research In Motion (RIM), a global leader in wireless innovation, revolutionized the mobile industry with the introduction of the BlackBerry solution in 1999. The BlackBerry product line includes the BlackBerry® PlayBook TM, the award-winning BlackBerry smartphone, software for businesses and accessories. BlackBerry products and services are used by millions of customers around the world to stay connected to the people and content that matter most throughout their day.

## **Springer**

#### Booth 211

#### www.springer.com

Our business is publishing. Throughout the world, we provide scientific and professional communities with superior specialist information produced by authors and colleagues across cultures in a nurtured collegial atmosphere of which we are justifiably proud. We foster communication among our customers, researchers, students and professionals enabling them to work more efficiently, thereby advancing knowledge and learning. Our dynamic growth allows us to invest continually all over the world. We think ahead, move fast and promote change: creative business models, inventive products, and mutually beneficial international partnerships have established us as a trusted supplier and pioneer in the information age.

#### **Subex**

#### Booth 207

#### www.subexworld.com

Subex Limited is a leading global provider of Operations and Business Support Systems (OSS/BSS) that empowers communications service providers (CSPs) to achieve competitive advantage through Business Optimization and Service Agility - thereby enabling them to improve their operational efficiency to deliver enhanced service experiences to subscribers.

## **TE Connectivity**

#### Booth 204

#### www.te.com

TE Connectivity is a global, \$14 billion company that designs and manufactures approximately 500,000 products that connect and protect the flow of power and data inside the products that touch every aspect of our lives. Our nearly 100,000 employees partner with customers in virtually every industry from consumer electronics, energy and healthcare, to automotive, aerospace and communication networks enabling smarter, faster, better technologies to connect products to possibilities.

#### **TELUS**

#### Booth 104

#### www.telus.com

TELUS is a leading national telecommunications company in Canada, with \$10.4 billion of annual revenue and 12.7 million customer connections including 7.3 million wireless subscribers, 3.6 million wireline network access lines and 1.3 million Internet subscribers and more than 500,000 TELUS TV customers. Led since 2000 by President and CEO, Darren Entwistle, TELUS provides a wide range of communications products and services including wireless, data, Internet protocol (IP), voice, television, entertainment and video.

#### **University of Ottawa**

#### Booth 110

#### www.uottawa.ca

Since 1848 the University of Ottawa has been Canada's university. Located in the heart of the nation's capital, the University has emerged as a vibrant "centre of learning," with a total population including students, teaching and support staff - of 40,000. The largest bilingual university in North America, the University is a major player in the cultural and economic development of the National Capital Region. The University of Ottawa is among Canada's leading teaching and research-intensive universities. We foster an environment where ideas flourish and innovation thrives. The student experience is enriched by our unique characteristics producing generations of exceptional graduates.

#### Wiley

#### Booth 101

#### www.wiley.com

Wiley publishes an enormous range of top quality consumer, professional, educational and research material, from the well-known Frommers and For Dummies guides, to college textbooks, highly ranked peer-reviewed primary research and evidence based medicine. Since their agreement in April 2001, John Wiley & Sons, Inc. and the IEEE Press have jointly developed and published books in the fields of electrical and computer engineering under the Wiley-IEEE Press imprint. All IEEE Press backlist titles are distributed by Wiley. Wiley-IEEE Press authors come from all areas of electrical engineering and computer science. Experts in their respective fields, our authors share a commitment to providing timely and effective information to meet the professional and educational needs of electrical and computer engineers.

## **IEEE PAVILION**

### **IEEE GLOBECOM 2012**

Booth 406

#### www.ieee-globecom.org/2012

The 2012 IEEE Global Communications Conference (GLOBECOM) will be held in beautiful Southern California right in the heart of Disneyland at the DISNEYLAND HOTEL December 3-7, 2012. IEEE GLOBECOM 2012 will offer cutting edge communications technology symposia, forums, panel discussions, tutorials, workshops, industry exhibits and renowned industry CEOs & CTOs in panel sessions and keynote speeches.

Come to the Anaheim IEEE GLOBECOM 2012 to learn but come also to enjoy the world famous Disneyland Resort. And be sure to bring your family to help you enjoy the wonder and magic of Disneyland and Southern California. We look forward to welcoming you.

### **IEEE GLOBECOM 2013**

#### Booth 410

The 2013 IEEE Global Communications Conference (GLOBECOM) will be held in Atlanta, GA at the Hilton Hotel, in the heart of downtown's finest eating and tourism establishments. IEEE GLOBECOM 2013 will offer cutting edge communications technology symposia, forums, panel discussions, tutorials, workshops, industry exhibits and renowned industry CEOs & CTOs in panel sessions and keynote speeches. And be sure to schedule some time for yourself and your loved ones to experience many of the nearby family-friendly attractions, such as the largest indoor aquarium in the US, numerous museums for art, history, and science (and Coca Cola, of course!), as well as one of the finest restaurant scenes in North America.

#### **IEEE GLOBECOM 2014**

#### Booth 405

Welcome to IEEE GLOBECOM 2014 in Austin, Texas. A compelling program is underway including technical & industry content along with opportunity for social networking. The Technical program will provide a high quality and comprehensive coverage of the state-of-the-art research in all areas of communications in more than a dozen parallel technical tracks. The Industrial Forum and Exhibition (IF&E) events will provide a comprehensive program tailored to the telecommunication practitioner's field of interest. An outstanding social program is being planned for you and your family's enjoyment. We will have pre-conference tours, a Texas style Welcoming Reception, Guest's Hospitality Suite, and post-conference tours and events.

### **IEEE ICC 2013**

#### Booth 413

#### www.ieee-icc.org/2013

IEEE ICC 2013 will be held in the charming city of Budapest, Hungary from June 9-13, 2013. The conference will be hosted in three adjacent five-star hotels in the very heart of the city, on the banks of the river Danube. The hotels offer magnificent panoramic views across the river, the Gellert Hill and the Royal Castle District, part of the UNESCO World Heritage. The paper submission deadline is set for September 16, 2012. We much look forward to an enlightening and enjoyable event with you!

#### **IEEE Ottawa Section**

#### Booth 407

#### www.ieeeottawa.ca

The IEEE Ottawa Section belongs to Region 7 of the IEEE that is better known as IEEE Canada. The Ottawa Section represents more than 2,000 individual members and serves to promote local events significant to Electrical, Computing, and Software Engineering. We offer great networking opportunities through the events that our chapters and section organize. If you are interested in the rapidly evolving and exciting field of computer systems, communications, and electronics you too can join the IEEE and be part of the IEEE Ottawa Section.

#### Women In Engineering (Wie)

#### Booth 402

#### www.wiley.com

The status and advancement of women in the engineering and science professions is the the focus of this membership group. Goals include facilitating the development of programs and activities that promote the entry into and retention of women in engineering programs.

Mission: To facilitate the recruitment and retention of women in technical disciplines globally.

Vision: A vibrant community of IEEE women and men collectively using their diverse talents to innovate for the benefit of humanity.





- For a better connection, please use the following SSID information
  - Blackberry Playbook Devices: IEEEICC2012
  - Other Devices: nonBB-IEEEICC2012
- If too many are near the same access point downloading the initial tablet set up, it may cause some congestions. Given there are 138 access points at the convention center, trying a different location may solve the problem.
- Use the Home and Back buttons to navigate through the Paperless+ application.
- Did you know you can use your PlayBook to take pictures? Use the Camera icon from your PlayBook's Home screen.
- Practice using your PlayBook while in the hotel or at home, while you have some spare time and are not rushing to find the papers or other content.
- Onsite assistance is available throughout the conference at the Tech Help Desk located in the registration area next to the Speaker Ready Area.
- Email questions or problems with the Paperless+™ application to paperlessplus@icc2012.ca.



- Charging stations are located in the exhibition area booths 201 and 212 on the 3rd floor of the convention center.
- The Ottawa Convention Centre is "green" meeting facility. The new facility uses materials that are regionally manufactured or recycled to contribute to the local economy and to mitigate against pollution associated with transportation.
- Originally known as Bytown (named after the settlement's founder, Lieutenant-Colonel John By), the City of Ottawa was officially established in 1855.
- Ottawa was named the capital city of Canada by Queen Victoria on December 31, 1857.
- Almost 50 per cent of Ottawa residents hold a post-secondary degree, certificate, or diploma, making the city among the highest educated in Canada.
   In addition, Ottawa has the highest per capita concentration of engineers, scientists, and residents with PhDs in the country.
- Two famous food icons of Canada to try is the "Beaver Tail" and the French Canadian "Poutine." You should not leave Ottawa without tasting them!
- Canada's national animal is the beaver. A hard working animal with a large flat tail ... but it's not the real tail you will be eating! A fried dough covered in one of many sweet and not sweet type toppings are tasty for desert or for a sandwich.
- A mix of steamy french fries, tasteful gravy and special squeaky local cheese come together in a bowl to make "Poutine."



- Tuesday morning opening session features remarks from the Honorable Gary Goodyear Minister of State (Science and Technology) (Federal Economic Development Agency for Southern Ontario) as well as keynote addresses of Eros Spadotto, Executive Vice President, Technology Strategy at TELUS, and Ian F. Akyildiz of the Georgia Institute of Technology, who will speak on the "Fundamentals of Molecular Nano-Communication Networks."
- Tuesday evening "Dialogue with Industry Leaders on Breaking Barriers to Innovation" hosted by Amanda Lang of The National and co-host of the Lang & O'Leary Exchange featuring a discussion with Ibrahim Gedeon of TELUS, Adam Drobot of Open TechWorks, Vish Nandal of Ericsson, Mike Hill of IBM, Wen Tong and Matt Bross of Huawei.
- Wednesday morning keynote and plenaries includes Matt Bross, CTO & Vice Chairman of Huawei, comments of industry plenary speaker Mike Hill,
   VP Enterprise Initiatives of IBM, and technical plenary presentations of H. Vincent Poor of Princeton University, who will discuss "Fundamental Limits on Information Security and Privacy" and P. R. Kumar of Texas A&M University, who will address "The Coming Era of Cyber-Physical Systems."
- Best Paper Awards Ceremony will follow the Wednesday morning keynote and plenary session.
- Wednesday evening conference banquet highlighted by an address from Sir Terry Matthews, Founder and Chairman of Wesley Clover. (Included in a full registration.)
- Thursday morning keynote and plenary session features Marcus Weldon, CTO of Alcatel-Lucent, comments of industry plenary speaker Lucy Hood, Executive Director of Communication Technology Management, and the technical plenary presentations of Raj Jain of Washington University, St-Louis, who will speak on the "Next Generation Internet: Architectures for Future Internet Evolution" and Victor Bahl of Microsoft will be "Putting the Cloud in the Palm of Your Hand."

More information on these events, such as time and location, can be found on the "Program" feature on the App.



## Second Day Opens with Full Day of Tutorials & Workshops

IEEE ICC 2012 continued its comprehensive technical agenda with the presentation of three morning tutorials dedicated to topics such as "Signal Waveform Design for Underwater Acoustic Communications," Application Architectures for M2M Communications" and "Advances in Wireless Sensor Networks" as well as more than a dozen workshops covering areas like "Intelligent Vehicular Networking," "Clouds, Networks & Data Centers," "Emerging Data Storage Technologies" and "Energy Efficiency in Wireless Networks" and the "Network of the Future."

In addition, the second full day of the "Workshop on Telecommunications: From Research to Standards" opened with the keynote address of Dr. Alexander D. Gelman, CTO of the NETovations Consulting Group, who addressed the "Emerging Ecosystem for Leveraging Industrial and Academic Research In IEEE Standards and Standards-Related Activities." During the session's opening remarks, Dr. Gelman highlighted IEEE ComSoc's extensive standards sponsorship experience, the organization's track record in leveraging technical activities and its management of intellectual property for use by both industry and academia.

Following the technical presentations of Mirja Kuhlewind of the Universitat of Stuttgard on the "Design & Evolution of Schemes for More Accurate ENC Feedback," and Syed S. Husain of NTT DOCOMO on "Enhanced Volte & its Roaming Aspects" and Peter Hasse of Huawei on "Cost-controlled Monitoring Information Collection in Heterogeneous Mobile Network Infrastructures," the session completed the morning with a four-person panel exploring "How Can Industry & Academia Collaborate on the Shape of Standards?" Throughout the discussion, Joe Touch of the University of Southern California, Dr. Heinrich J Stuettgen of NEC Laboratories, Dr. Adnan Abu-Dayya of the Qatar Mobility Innovation Center and Dr. Asok Chatterjee of Ericsson detailed the numerous logistical and financial challenges confronting the standards process as well as some of the international initiatives in which they are involved. This included the development and deploy of intelligent platforms, applications and services in the Middle East in addition to overcoming the interoperability protocols confronting the next wave of cloud computing communications.

Along with the half-day tutorials on "60 GHz wireless Communications," "Content Streaming for Mobile Environments" and "Radio Resource Management in Femtocell Networks," the continued discussion of standards and the second-half of the workshop agenda are currently underway throughout the remainder of the afternoon. Please continue to check your Blackberry Playbook for conference updates and scheduling or reach out to our registration personnel located on the first floor of the conference center.

# IEEE ICC 2012 Officially Commences with Annual Ribbon-cutting Ceremonies Prior to the Opening of the Annual Welcome Reception & Exhibition of Innovation

IEEE ICC 2012 officially commenced this evening with the traditional ribbon cutting of the conference banner leading to the Welcome Reception and Exhibition of Innovation. General Chair Ibrahim Gedeon of TELUS Canada, Executive Conference Chair Wahab Almuhtadi of Algonquin College in Canada and Ottawa's esteemed Mayor Jim Watson performed this year's honors, while prominently flanked by two Royal Canadian Mountain Police (RCMP) in full uniform.

Immediately afterwards hundreds of attendees streamed into Canada Hall of the Ottawa Convention Center as the eight-member color guard and official band of the RCMP circled the conference floor and the exhibits of leading international communications companies and local Canadian organizations such as TELUS, TE Connectivity, ARUBA Networks, Optelian, Ciena, First Robotics and National Instruments.

Once inside, Executive Conference Chair Almuhtadi began the proceedings by welcoming everyone to the IEEE Communication Society's first paperless event, which is currently enabling speakers to offer presentations ahead of time to attendees with just few touches of their new Blackberry Playbooks. Following these opening remarks were then the brief comments of General Chair Gedeon, who simply explained the event's planning as "three years of why not" that eventually turned into "happy to be here" and Mayor Watson, who welcomed IEEE ICC 2012 to Canada's lovely capitol city and its great hospitality filled with beautiful shops and numerous historic locales.

Executive Conference Chair Almuhtadi then concluded the night's introductions by proudly thanking the IEEE Communications Society (ComSoc) and the IEEE Ottawa Chapter for hosting the six-day, premier event and all the associated festivities. For the remainder of the reception, attendees then browsed the exhibit hall, while dining at the numerous buffet stations and listening to the soulful ballads of a local Canadian 12-year-old student, who also sang the Canadian National Anthem accompanied by her three-piece instrumental band.