



*The 72nd IEEE
Vehicular Technology Conference*

Final Programme



6 - 9 September 2009

Ottawa, Canada

Welcome from the General Co-chairs

It is a great honour and pleasure to welcome you all to Ottawa for the IEEE 72nd Vehicular Technology Conference Fall 2010.

The conference features an extremely rich program including a great number of plenary sessions, panels, tutorials, and workshops, in addition to technical sessions in which over 500 papers will be presented.

The attendees will have the opportunity to hear some of the world's most distinguished industry leaders, and world renowned researchers from industry, government labs, and academia.

We'd like to take this opportunity to thank all the members of the Organizing Committee, Advisory Committee, and Workshop Committees. The outstanding technical program would not have been possible without the dedication of our Technical Program Chair, Professor Sherman Shen. We are also deeply grateful to the countless experts in our research community who have been involved in the paper review process.

We'd like to acknowledge the conference patrons, Huawei Technologies, Ericsson, Research In Motion, and Wiley-Blackwell, as well as the exhibitors. We thank the Communications Research

Centre Canada (CRC) for opening its doors to our delegates for a post-conference tour.

We also acknowledge the continuous support of IEEE Ottawa and the VTS Ottawa Chapter. Thanks to the legions of student volunteers. Last, but not least, we extend a special thanks to all paper authors for submitting their works to VTC2010-Fall!

Ottawa is one of the loveliest cities in North America. The conference hotel, Westin Ottawa, is right in the heart of downtown, across from Parliament, and within walking distance to several national museums, and other attraction points. We hope our delegates will have the opportunity to explore this great city.

The conference days coincide with major Muslim and Jewish holidays, Eid Al-Fitr and Rosh Hashanah, respectively; Eid Mubarak and L'shanah Tovah!

We have made every effort to have the VTC tradition of excellence continue in VTC2010-Fall as well. We hope our delegates find VTC2010-Fall an exciting experience...

Halim Yanikomeroglu and John Reid,
General Chairman, IEEE VTC2010-Fall

Welcome from the TPC Chair

On behalf of the Technical Program Committee, I would like to welcome you to the 72th IEEE Vehicular Technology Conference (IEEE VTC2010-Fall) to be held in Ottawa - the capital city of Canada. The IEEE VTC2010-Fall, themed 'Connecting the Mobile World', will showcase a technical program consisting of 11 tracks, 8 tutorials, and 3 workshops, covering many exciting aspects of mobile communications, transportation, vehicular electronics, and new emerging technologies. The conference will also feature world-class plenary speakers and panel sessions. There were 1,051 paper submissions from more than 40 countries to the 11 technical tracks, and 510 papers have been accepted after a rigorous technical review process. The accepted papers will be presented in 81 oral sessions

and 11 poster sessions. All the accepted papers will be published in the conference proceedings. I would like to express my sincere appreciation and thanks to all the track, tutorial and workshop co-chairs, the technical program committee members, and the external reviewers for making great efforts in the paper review process. I would like to thank all the authors who submitted their papers to the conference. I would also like to thank the IEEE VTC2010-Fall Organization Committee for its full support. I look forward to meeting you in Ottawa, Canada, this September. You will enjoy the conference and the capital city of Canada!

Xuemin (Sherman) Shen, *TPC Chairman*
IEEE VTC2010-Fall

Welcome from the VTS President

On behalf of the IEEE Vehicular Technology Society, it is my pleasure to welcome you to the IEEE 72nd Vehicular Technology Conference in Ottawa, Canada. The goal of the conference is to

bring together researchers from the whole world to discuss and exchange ideas in the field of wireless, mobile, and vehicular technology.

Ottawa is the capital of Canada located on the bank of the Ottawa River which forms the border between Ontario and Quebec. Ottawa has the reputation of having very high quality of living, the second highest among all cities in the Americas according to a survey this year. It is also considered the fourth cleanest city in the world by a well-known magazine. It is a modern city with history and diverse transportation by air, road, rail, and water. I am sure that Ottawa is a great location for the Vehicular Technology Conference 2010-Fall. The Vehicular Technology Conference has been the flag ship conference of the IEEE Vehicular Technology Society for over sixty years. For last sixteen years it has been successfully held twice a year with geographical diversity: fall conferences in North America and spring conferences in Europe and Asia Pacific.

The VT Society has its unifying theme of mobility. Under the slogan of Connecting the Mobile World, the VT Society is committed to all aspects of mobility related to wireless communications, vehicle electronics, motor vehicles, and land transportation. Besides extending its conference activities the VT Society has been very successful in recent years in publishing its Transactions on Vehicular Technology with more quality papers submitted and its review process time shortened. Indeed its impact factor has been increased for last five years in a row. We invite

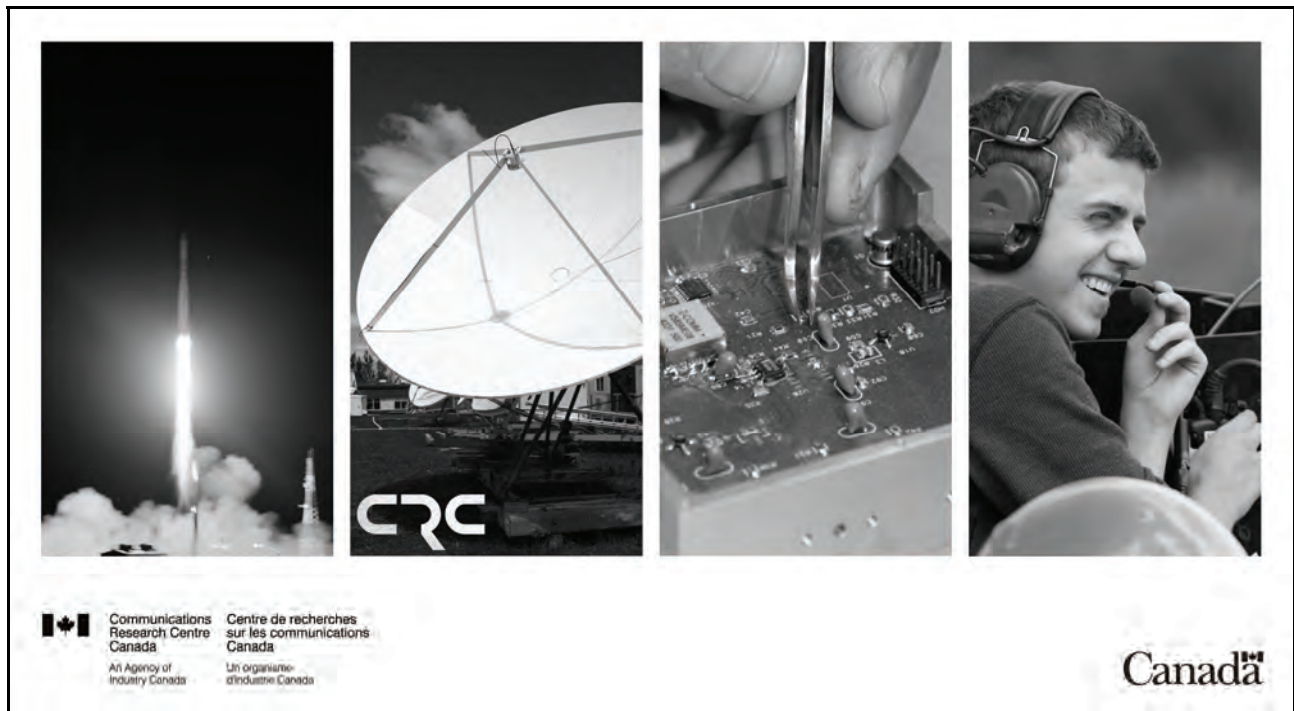
you to get involved within the VTS as a member to help to shape the future of your profession.

Organizing a large technical conference like the VTC requires a major endeavor which involves a committed team of volunteers many of whom are the member of VTS. The continuing success of our conferences depends heavily on the quality work of these committed members of VTS. I must tell you that I am very much impressed with the enthusiasm of the local members who are involved in organizing this conference. I thank them all for their generous commitment and hope that it may inspire some of you to consider hosting a future VTC in their locations. Our conference committee lead by VP Conference is ready to listen to your proposal and willing to provide you all the support needed.

I wish to convey a special thank you to the General Co-chairs of the IEEE 72nd Vehicular Technology Conference, Halim Yanikomeroglu and John Reid, and its Technical Program Chair, Xuemin Shen, as well as other members of the committees for their thoughtful and skillful implementation of the excellent conference program.

Finally, I wish to thank all of the delegates attending the conference and wish you a most enjoyable stay in Ottawa.

Jae Hong Lee, *President*
IEEE Vehicular Technology Society



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LTE, The UMTS Long Term Evolution: From Theory to Practice

Stefania Sesia, Issam Toufik, Matthew Baker

9780470697160, Cloth, 648pp, \$130.00, March 2009, Wiley

The most comprehensive book on LTE available, this is an indispensable resource, explaining the underlying theory in an accessible way. It is a collaborative effort of key experts actively participating in the standardization and development of LTE. By developing readers' understanding of the theoretical limits and how the theory has been applied to the practical standard, the book provides the foundation necessary for engineers to focus their implementation efforts on the most critical aspects, and for researchers to identify the most fruitful areas for further development and future evolution.



Modelling the Wireless Propagation Channel: A simulation approach with Matlab

Fernando Prez Fontn, Perfecto Mario Espieira

9780470727850, Cloth, 268pp, \$130.00, September 2008, Wiley

Each chapter in this book begins with a brief theoretical overview, then moves to a step-by-step simulation procedure, and finally provides results with comments.

The coverage includes: Introduction to wireless propagation, Shadowing effects, Coverage and interference, Introduction to multipath, Multipath Narrowband channel, Shadowing and multipath, Multipath Wideband channel, Propagation in micro and pico-cells, Mega-cells.



Introduction to Digital Communication Systems

Krzysztof Wesolowski

9780470986295, Cloth, 578pp, \$100.00, October 2009, Wiley

Spanning modern topics in digital communication systems, *Introduction to Digital Communication Systems* links topics to practical applications and presents necessary theoretical knowledge in this intensively developing field. Classical coding theory is supplemented by description of newer developments such as turbo-codes and Low Density Parity Check codes. The text presents new developments achieved in wireless communications such as coding, modulations, and multiple access methods.



Networking Fundamentals: Wide, Local and Personal Area Communications

Kaveh Pahlavan, Prashant Krishnamurthy

9780470992906, Paper, 656pp, \$ 90.00, June 2009, Wiley

Networking Fundamentals employs up-to-date information on new technologies with the evolution of wireless wide, local, and personal area networks and the convergence of wireless and fixed internet access technologies. Taking a holistic approach, the text emphasizes the physical layer and systems engineering aspects, making this a vital resource for advanced undergraduate and graduate students in electrical engineering and computer science programs.




Vehicular Networking: Automotive Applications and Beyond

Marc Emmelmann, Bernd Bochow, Christopher Kellum

9780470741542, Cloth, 314pp, \$115.00, May 2010, Wiley

This book presents vehicular communication in a broader perspective that includes more than just its application to the automotive industry. It provides, researchers, engineers, decision makers and graduate students in wireless communications with an introduction to vehicular communication focusing on car-to-x and train-based systems.

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Plenaries

Tuesday 7 September 2010 08:30-10:30 (Confederation II/III)

Opening Plenary

Matt Bross, Global CTO, Huawei

Matt Bross is the Global Chief Technology Officer of Huawei. In this role, Mr. Bross focuses on identifying global telecommunications industry and network architecture trends that will guide Huawei's continuous customer-centric innovation of products and solutions. He will also support the company's efforts in delivering the latest products and solutions for North American customers.

Mr. Bross has had a long and distinguished career in the telecommunications industry. Most recently, he was Group Chief Technology Officer of BT Group and CEO of BT Innovate, responsible for technology strategy, vision and innovation across all BT divisions. Mr. Bross was a driving force behind BT's multi-billion pound 21st Century Network transformation program and led a global BT technology and

research organization that spanned the Asia-Pacific, the U.S. and Europe. Previously, Mr. Bross held senior positions at ConTel, MasterCard, Critical technology a company he founded and Williams Communication.

Mr. Bross is widely regarded as a visionary speaker on technology and innovation. In 2007, he was awarded a Stevie International Business award for "Best MIS & IT Executive" and a William Pitt Fellowship by Pembroke College at the University of Cambridge. In 2008, Matt was listed in the Global Telecoms Business top 100 most influential people in the telecoms industry.

Mr. Bross is married with 5 children and proud to have one of the coolest jobs on the planet.

Tuesday 7 September 2010 08:30-10:30 (Confederation II/III)

Opening Plenary

Alex Vukovic, VP Wireless, Communications Research Centre Canada (CRC)

Dr. Alex Vukovic is Vice-President of Terrestrial Wireless Systems Research Branch at Communications Research Centre Canada (CRC). Currently, his focus is on executive leadership of innovative wireless network communication concepts, technologies and applications, as well as broadband radio communication building blocks, to best position and support the Canadian ICT sector, Industry Canada and Canadian economic development strategies.

Dr. Vukovic has over 20 years in science and technology leadership in communications and network architectures acquired at industry, research laboratories and academia. Before joining CRC in 2001, Dr. Vukovic managed technology integration at Nortel, a multi-billion-dollar investment.

Dr. Vukovic is an internationally recognized authority, technology adviser, industrial research project leader. In 2006, for example, he was selected to be a Canadian Technology Ambassador, representing Canada by helping further develop Canada's and Japan's technology relationship in photonics. He is also a distinguished speaker, leader of international

committees, editor and author of over 100 journal and conference papers, and scientific and committee chairman. Recently, he was General Chair of the international Wireless and Optical Communications conference (2007 and 2008). In addition, Dr. Vukovic proudly represented CRC and Industry Canada at the international level by sharing his visionary thinking about future communication technologies (European Conference and Exhibition on Optical Communication 2006, 2007 and 2009).

Dr. Vukovic has received national and international recognition for his leadership in science and technology, including the Nortel Gold Award, IEEE Award, NSERC Synergy Award (team), IASTED Achievement Award, Industry Canada Award and CRC's President Leadership Award (2009). He earned his M.A.Sc. degree in 1987 and his Ph.D. degree from combined studies at the University of Belgrade, Yugoslavia, and Friedrich – Alexander University, Germany, in 1990. Dr. Vukovic is an Adjunct Professor at the University of Ottawa, Senior Member of IEEE and a Professional Engineer in Ontario. He also completed Music Conservatorium for piano.

Wednesday 8 September 2010 08:30-10:30 (Confederation II/III)

Wednesday Plenary

Jan Färjh, Vice President Head of Ericsson Research

Dr Jan Färjh took his M.Sc in telecommunication at the royal institute of Technology in Stockholm, 1985. After his graduation he developed signal processing algorithms for airborne radar systems. In 1990 he joined Ericsson and started to work with radio access technologies. He has a strong background in wireless research and was part of Ericsson's pioneering activities in WCDMA in the early 90's. In 1996 he became manager of the unit responsible for radio access research. The research performed in this unit has substantially contributed to the evolution of WCDMA, HSPA and 3G LTE,

technologies that today provide Mobile Broadband on global base.

In 2007 he became Head of Ericsson Research. Ericsson Research is a global organisation present in North America, Europe and Asia.

Ericsson Research consists of 600 researchers in 10 different countries and is responsible for technology research in areas such as wireless, transport, packet, services, software, multimedia, security and safety and sustainability.

Wednesday 8 September 2010 08:30-10:30 (Confederation II/III)

Wednesday Plenary

Adam Drobot, CEO, Telcordia USA

As CTO and President of Advanced Technology Solutions, **Dr. Drobot** is responsible for the company's Applied Research and Government & Public Sector groups. He oversees an Applied Research organization of more than 250 researchers who are involved in many aspects of Internet, broadband, information networking, and software technologies. The Applied Research group is renowned for developing such groundbreaking technologies as ADSL, AIN, ATM, ISDN, Frame Relay, PCS, SMDS, SONET, video-on-demand, and Internet Telephony.

The Government & Public Sector group, with over 100 senior consultants, is the single focal point that concentrates all Telcordia resources to accelerate company growth in the government space. This group is responsible for planning, developing, and implementing systems engineering solutions for Federal, State and Local governments. These solutions span telecommunications and IT areas, including networking and operations for traditional, as well as IP and converged general purpose and mission-specific networks. The two groups combined give Dr. Drobot the unique opportunity to exploit synergies in many areas including cyber security, reliability, and information assurance to create value for Telcordia customers.

Prior to Telcordia, Dr. Drobot managed the Advanced Technology Group at Science Applications International Corporation (SAIC), a \$7B Fortune 250 firm. He also served as the Senior Vice President for Science and Technology in his 26 years at SAIC. While at SAIC he served as the principal investigator on projects dealing with high energy plasmas at the Naval Research Laboratory, as the principal investigator on the NASA Tethered Satellite System, and was responsible for SAIC's Deep Water Program for recapitalization of the U.S. Coast Guard.

Dr. Drobot's main research interest is in the development of multidisciplinary, computationally-based tools for life cycle support of complex products. He strongly supports research in secure, highly-reliable communications across the industry's most complex networks, operations and systems technologies. He has been the principal or key participant in the development of several large, scientific code systems. He has also published more than 100 journal articles, is a frequent contributor to industry literature and conference presentations and holds 16 patents.

Panels

Tuesday 7 September 2010, 18:00-20:00 (Confederation II /III)

Wireless Research: Investment by Industry, Government and Universities

Chair: David Falconer *Carleton University, Canada*

Panelists:

Michel Fattouche	<i>University of Calgary, and Chief Technology Officer, Cell-Loc Inc</i>
Werner Mohr	<i>Head of Research Alliances, Nokia Siemens Networks, and Chair of eMobility ETP</i>
Wen Tong	<i>Chief Technical Officer, Global Wireless, Huawei</i>
Bill Tranter	<i>Program Officer for Communications and Information Foundations, NSF, USA</i>

This panel will address issues of financial and other support for research and development leading to new wireless systems, services and standards. Topics to be discussed include: what areas are considered top priorities by research-supporting organizations, how were these priority areas arrived at, and are there future hot areas of wireless research that should be getting more support?

Prof David Falconer received the B.A. Sc. degree in Engineering Physics from the University of Toronto in 1962, the S.M. and Ph.D. degrees in Electrical Engineering from M.I.T. in 1963 and 1967 respectively, and an honorary doctorate of science from the University of Edinburgh in 2009. After a year as a postdoctoral fellow at the Royal Institute of Technology, Stockholm, Sweden he was with Bell Laboratories from 1967 to 1980 as a member of technical staff and group supervisor. During 1976-77 he was a visiting professor at Linköping University, Linköping, Sweden. Since 1980 he has been with Carleton University, Ottawa, Canada, where he is now Professor Emeritus and Distinguished Research Professor in the Department of Systems and Computer Engineering.

His current research interests center around beyond-third-generation broadband wireless communications systems. He was Director of Carleton's Broadband Communications and

Wireless Systems (BCWS) Centre from 2000 to 2004. He was the Chair of Working Group 4 (New Radio Interfaces, Relay-Based Systems and Smart Antennas) of the Wireless World Research Forum (WWRF) in 2004 and 2005. He received the 2008 Canadian award for Telecommunications Research, a 2008 IEEE Technical Committee for Wireless Communications Recognition Award, the IEEE Canada 2009 Fessenden Award (Telecommunications), and the IEEE Communications Society Award for Public Service in the Field of Telecommunications. He is an IEEE Life Fellow.

Prof Michel Fattouche is a professor in the department of Electrical and Computer Engineering in the Schulich School of Engineering, at the University of Calgary. His research work has led to 17 patents issued and 4 pending. Based on his patents in W-OFDM (Wide-band Orthogonal Frequency Division Multiplexing) he co-founded Wi-LAN Inc. in 1993 which led the Institute of Electrical and Electronics Engineers

(IEEE) to incorporate Wi-LAN's patented W-OFDM technology in its "WirelessMAN" Standard 802.16a. His patents on Wireless Data communications have been licensed by more than 100 wireless companies worldwide. Based on his patents on Super-Resolution, Dr. Fattouche also co-founded Cell-Loc Inc. in 1995 (which became Cell-Loc Location Technologies Inc. in 2003), a developer of a family of network-based wireless location products that enable location-sensitive services. Several networks have been deployed in Canada and in Brazil. He is currently on the Board of Directors of EDF Inc., a company specializing in the weight loss market using a proprietary RF-based technology. He has been named "Calgarian of the Year" by Business in Calgary magazine in 2000, "Prairies Entrepreneur of the Year" in 2000 for Communications and Technology as part of the Ernst and Young's Entrepreneur of the Year Program, and "Professor of the Year" by the Student Union for Teaching Excellence in the Department of Electrical and Computer Engineering at the University of Calgary in 1999. He is also a member of the Association of Professional Engineers and Geophysicist of Alberta.

Dr Werner Mohr was graduated from the University of Hannover, Germany, with the Master Degree in electrical engineering in 1981 and with the Ph.D. degree in 1987.

Dr. Mohr joined Siemens AG, Mobile Network Division in Munich, Germany in 1991. He was involved in several EU funded projects and ETSI standardization groups on UMTS and systems beyond 3G. Since December 1996 he was project manager of the European ACTS FRAMES Project until the project finished in August 1999. This project developed the basic concepts of the UMTS radio interface. Since April 2007 he is with Nokia Siemens Networks GmbH & Co. KG in Munich Germany, where he is Head of Research Alliances. He was the coordinator of the WINNER Project in Framework Program 6 of the European Commission chairman of WWI (Wireless World Initiative) and of the Eureka Celtic project WINNER+. The WINNER project laid the foundation for the radio interface for IMT-Advanced and provided the starting point for the 3GPP LTE standardization. In addition, he was vice chair of the eMobility European Technology Platform in the period 2008 – 2009 and he is now eMobility chairperson for the period 2010 – 2011. Werner Mohr was chair of the "Wireless World Research Forum – WWRF" from its launch in August 2001 up to December 2003. Werner Mohr is co-author of a book on "Third Generation Mobile Communication

Systems" and a book on "Radio Technologies and Concepts for IMT-Advanced".

Dr Wen Tong's biography was not available at time of going to press.

Dr William H. (Bill) Tranter received the Ph.D. degree in 1970, respectively. He joined the faculty of the University of Missouri-Rolla in 1969. From 1980 to 1985, he served as Associate Dean of Engineering with responsibility for research and graduate affairs. He was appointed Schlumberger Professor of Electrical Engineering in 1985 and served in that position until his early retirement from UMR in 1997.

In 1996-7 Bill served as an Erskine Fellow at Canterbury University in Christchurch, New Zealand. In 1997 he joined the Electrical Engineering faculty of the Virginia Polytechnic Institute and State University, (Virginia Tech), in Blacksburg, VA, as the Bradley Professor of Communications. In 2009 Bill took an IPA leave from Virginia Tech and now serves as Program Director for Communications, Information Theory, and Coding at the National Science Foundation.

His research interests are digital signal processing and computer-aided design of communication systems applied to wireless communications systems. He has authored numerous technical papers and is the co-author of three textbooks: Principles of Communications: Systems, Modulation and Noise (Wiley, 2002), Signals and Systems (Prentice-Hall, 1998), and Simulation of Communication Systems with Applications to Wireless Communications (Prentice-Hall).

He has held many positions within the IEEE Communications Society including Director of Journals, Director of Education, and as a member and chair of a number of technical committees. He served as a member of the Board of Governors of the IEEE Communications Society, and as Vice President—Technical Activities. For eleven years he served as Editor-in-Chief of the IEEE Journal on Selected Areas in Communications. In that position he founded the IEEE Transactions on Wireless Communications. He recently completed a three-year term as a member of the IEEE Fellow Committee for the IEEE Board of Directors.

He was named a Fellow of the IEEE in 1985 and has received numerous awards including the James McLellan Meritorious Service Award, the IEEE Exemplary Publications Award, the IEEE Centennial Medal, and the IEEE Third Millennium Medal.

Thursday 09 September 2010, 08:30–10:30 (Confederation II)

A Reality Check of Vehicular Networking: Where we are and what lies ahead?

Chair: Onur Altintas *Toyota InfoTechnology Center, Japan*

Panelists:

Massimo Osella	<i>GM Research, USA</i>
Luca Delgrossi	<i>Mercedes-Benz Research & Development North America, Inc</i>
Eylem Ekici	<i>Ohio State University, USA</i>
Tim Leinmüller	<i>DENSO Automotive Deutschland GMBH</i>

Vehicular communications has significant potential to enable diverse applications such as traffic safety, traffic efficiency and information provisioning. This panel will overview the current status of vehicular communications including basic characteristics and will give an update on trials and deployment plans. The panel will also address technical challenges stemming from high mobility of vehicles, real-time nature of applications, multitude of system and application related requirements, scalability and interoperability of the

solutions, security requirements associated with the envisioned applications. The panel intends to address what needs to be done next and whether, as the research community, we are addressing the real problems or we are devising new problems that are of little relevance to the requirements of vehicular applications.

Dr. Onur Altintas is a senior researcher at the R&D Group of Toyota InfoTechnology Center, Co. Ltd, in Tokyo. From 1999 to 2001 he was with Toyota Motor Corporation and from 2001 to 2004 he was with Toyota InfoTechnology Center USA, and was also a visiting researcher at Telcordia Technologies between 1999 and 2004. Before joining Toyota Motor Corporation in 1999, he was a research scientist at Ultra High Speed Network and Computer Technology Labs (UNCL), Tokyo. He received his B.S. (1987) and M.S. (1990) degrees from Orta Dogu Teknik Universitesi, Ankara, Turkey, and his Ph.D. (1995) degree from the University of Tokyo, Japan; all in electrical engineering. He served as the Co-Chair for Vehicle-to-Vehicle Communications Workshops (V2VCOM 2005 and V2VCOM 2006) co-located with ACM MobiQuitous, and V2VCOM 2007 and V2VCOM 2008 co-located with IEEE Intelligent Vehicles Symposium. He also served as the Co-Chair for the IEEE Workshop on Automotive Networking and Applications (AutoNet 2006, AutoNet 2007 and AutoNet 2008) co-located with IEEE Globecom. He is the general co-chair of the First IEEE Vehicular Networking Conference (IEEE VNC 2009) held in October 2009, in Tokyo and the Second IEEE VNC 2010 to be held in New Jersey, in December 2010.

Massimo Osella is the manager of Electronic Control and Software Architectures and Vehicle Connectivity group within the ECI Lab in General Motors R&D. His research areas are vehicle electronic systems architectures, network protocols, software architectures, safety and security, infotainment, wireless technologies and V2V communications. He received a master degree (laurea) in Electronic Engineering at Politecnico of Torino (Italy) in 1987. He spent 19 years in FIAT Research Center in Torino (Italy) working at the Electronic Systems division where he was Group Manager of the Diagnosis & Safety group. He was responsible of the safety analysis of several production and research Fiat projects. He also worked on several European research projects on diagnosis, by-wire and system architecture topics; the last one was EASIS (Electronic Architecture and System Engineering for Integrated Safety Systems) where he led the Hardware Architecture work package. In 2006 he joined GM R&D in Warren (Michigan, USA) and he was working on a Fault Tolerance research project in collaboration with Carnegie Mellon University. More recently he become responsible also of the research projects in the areas of vehicle to vehicle communications and infotainment platforms.

Dr Luca Delgrossi holds a PhD in Computer Science received from the Technical University of Berlin, Germany. Among his past activities, he worked on real-time multimedia communications in their early stage at the International Computer Science Institute (ICSI) at UC Berkeley, CA, and the IBM European Networking Center (ENC) in Heidelberg,

Germany. He served as Co-Chair for the IETF ST Working Group producing Internet RFC 1819 (IP version 5), and as Associate Director for the Centre for Research on the Applications of Telematics to Organizations and Society (CRATOS) of the Catholic University of Milan (Italy). He is among the founders of the Italian Chapter of the Internet Society. Today, Dr. Delgrossi leads the Vehicle-Centric Communications (VCC) team at Mercedes-Benz Research & Development North America, Inc. in Palo Alto, CA. The VCC team implemented the first on-board equipment (OBE) with a 5.9 GHz Dedicated Short Range Communications (DSRC) radio performing channel switching (2006) and publicly demonstrated a Mercedes-Benz S-550 coming to stop automatically upon detection of an imminent red light violation at an instrumented intersection (ITS World Congress New York, 2008). He serves as Chairman of the Board of Directors at the Vehicle Infrastructure Integration Consortium and as co-editor of the IEEE Communication Magazine Automotive Series.

Dr Eylem Ekici has received his BS and MS degrees in Computer Engineering from Bogazici University, Istanbul, Turkey, in 1997 and 1998, respectively. He received his Ph.D. degree in Electrical and Computer Engineering from Georgia Institute of Technology, Atlanta, GA, in 2002. Currently, he is an associate professor in the Department of Electrical and Computer Engineering of The Ohio State University, Columbus, OH. He is an associate editor of IEEE/ACM Transactions on Networking, Computer Networks Journal (Elsevier), and ACM Mobile Computing and Communications Review. He also served as the TPC co-chair of IFIP/TC6 Networking 2007 conference and ConWiN 2005, SenMetrics 2005, and Med-Hoc-Net 2004 workshops. Prof. Ekici is the recipient of 2008 Lumley Research Award of the College of Engineering at OSU. Dr. Ekici's current research interests include wireless sensor networks, vehicular communication systems, and next generation wireless systems, with a focus on routing and medium access control protocols, resource management, and analysis of network architectures and protocols. He is a member of IEEE and ACM.

Tim Leinmüller received his joint-degree in Electrical Engineering from ENST-Paris and University of Stuttgart in 2003. From 2003 to 2007 he was with DaimlerChrysler AG Group Research and Advanced Engineering. In 2007 he joined DENSO AUTOMOTIVE Deutschland GmbH, where his activities focus on research and standardization in the area of V2X Communication. He is representing DENSO in the Car2Car Communication Consortium (C2C-CC) where he is also co-chairing the architecture working. He serves as DENSO's official contact to ETSI and he is contributing to the standardization efforts in ETSI TC ITS (technical committee for intelligent transport systems).

Thursday 9 September 2010, 08:30–10:30 (Confederation III)

Directions for Wireless Research: Can we meet industry's wants and needs?

Chair: Lajos Hanzo *University of Southampton, UK*

Panelists:

Reinaldo Valenzuela *Bell Labs, Alcatel-Lucent*

Gerhard Fettweis *Vodafone Chair Mobile Communications Systems, TU Dresden, Germany*

Elvino Sousa *University of Toronto, Canada*

Amidst the profusion of wireless networking and services alternatives, what are the directions that today's R&D professionals should take in order to meet industry expectations and win industry's support? This panel will offer views on contentious questions such as • Have academic publications with their idealized models become irrelevant to the wireless industry? • Have standards bodies replaced IEEE publications as the for a peer review of innovative ideas? • Can academics be "up to date" without participating in the standard making process? • Will 4G be mainly vertical handoff among diverse wired and wireless access networks? • Can technical advances be leveraged across alternative and sometimes competitive access systems such as LTE and WiMAX? • Will ever more complex techniques continue to squeeze higher capacity out of available bandwidth? • Should we facilitate cognitive radio access to private spectrum? • Does the industry plan to offer preferential service quality to users willing to pay?

Prof Lajos Hanzo FREng, FIEEE, FIET, DSc received his degree in electronics in 1976 and his doctorate in 1983. During his 34-year career in telecommunications he has held various research and academic posts in Hungary, Germany and the UK. Since 1986 he has been with the School of Electronics and Computer Science, University of Southampton, UK, where he holds the chair in telecommunications. He has co-authored 20 John Wiley – IEEE Press books on mobile radio communications totalling in excess of 10 000 pages, published about 950 research papers and book chapters at IEEE Xplore, acted as TPC Chair of IEEE conferences, presented keynote lectures and been awarded a number of distinctions. Currently he is directing an academic research team, working on a range of research projects in the field of wireless multimedia communications sponsored by industry, the Engineering and Physical Sciences Research Council (EPSRC) UK, the European IST Programme and the Mobile Virtual Centre of Excellence (VCE), UK. He is an enthusiastic supporter of industrial and academic liaison and he offers a range of industrial courses. He is also an IEEE Distinguished Lecturer as well as a Governor of both the IEEE ComSoc and the VTS. He is the Editor-in-Chief of the IEEE Press and a Chaired Prof. also at Tsinghua University, Beijing. For further information on research in progress and associated publications please refer to <http://www-mobile.ecs.soton.ac.uk>

Dr Reinaldo A. Valenzuela obtained his B.Sc. at the University of Chile, and his Ph.D. from Imperial College of Sc. and Tech., U. of London, England. At Bell Laboratories, he carried out indoor microwave propagation measurements and developed statistical models. He also worked on packet reservation multiple access for wireless systems and optical WDM networks. He became Manager, Voice Research Dept., at Motorola Codex, involved in the implementation integrated voice and data packet systems. On returning to Bell Laboratories he was involved in propagation measurements and ray tracing propagation prediction. He received the Distinguished Member of Technical Staff award and is Director of the Wireless Communications Research Department. He is currently engaged in MIMO / space time systems achieving high capacities using transmit and receive

antenna arrays. He is a Fellow of the IEEE. He has been editor for the IEEE Transactions on Communications and the IEEE Transactions on Wireless. He has published over 130 papers and has 12 patents. He has over 10 000 Google Scholar citations and he is a 'Highly Cited Author' in Thomson ISI and a Fulbright Senior Specialist. He is the 2010 recipient of the IEEE Eric E. Sumner Award.

Prof Gerhard Fettweis earned his PhD degree from Aachen University of Technology (RWTH) in 1990. He is IEEE Fellow, and active in organizing conferences (e.g. IEEE ICC 2009) and workshops. From 1990 to 1991, he was Visiting Scientist at the IBM Almaden Research Center in San Jose, CA, developing signal processing innovations for IBM's disk drive products. From 1991 to 1994, he was a Scientist with TCSI Inc., Berkeley, CA, responsible for signal processor development projects for cellular phone chip-sets. Since 1994 he holds the Vodafone Chair at Technische Universität Dresden, Germany. During this time the chair has spunout nine start-ups: Systemonic, Radioplan, Signalion, InCircuit, Dresden Silicon, Freedelity, RadioOpt, Blue Wonder Communications, InRadios.

Prof Elvino S. Sousa received his B.A.Sc. in engineering science, and the M.A.Sc. in Electrical Engineering from the University of Toronto in 1980 and 1982 respectively, and his Ph.D. in electrical engineering from the University of Southern California in 1985. Since 1986 he has been with the department of Electrical and Computer Engineering at the University of Toronto where he is now a Professor and the Jeff Skoll Professor in Computer Network Architecture. He has performed research in CDMA and wireless systems since 1983. His current interests are in the areas of broadband wireless systems, smart antenna systems, autonomous infrastructure wireless networks, cognitive radio, self configurable wireless networks, user deployed networks, and cognitive networks. He was the founder of wireless communications at the University of Toronto and is the director of the wireless lab, which has undertaken research in wireless systems for the past 24 years. He has been invited to give lectures and short courses on spread spectrum, CDMA, and wireless systems in many countries, and has been a consultant to industry and

Governments internationally in the area of wireless systems. He was the technical program chair for PIMRC 95, vice-technical program chair for Globecom '99, and has been involved in the technical program committee of numerous international conferences. He is a co-technical program chair for the upcoming WPMC and PIMRC conferences. He is a past

chair of the IEEE Technical committee on Personal Communications. He has spent sabbatical leaves at Qualcomm and Sony CSL/ATL, where he was the holder of the Sony sabbatical chair. He has been awarded the Queen Elizabeth II Golden Jubilee Medal.

Registration

Registration will take place in the Explorer Hall lobby area. Opening times are:

- Monday 6 September 0800 – 1700 *
- Tuesday 7 September 0730 – 1730
- Wednesday 8 September 0730 – 1730
- Thursday 9 September 0730 – 1730

* Also outside the reception for badge and ticket pickup only – bags can be picked up later.

Breaks

Coffee breaks will take place in the exhibit and poster area in Confederation I.

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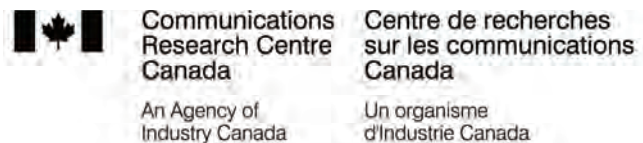
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Social Events

Lunches, which are included in the full registration, will be served in Confederation II/III. **You will need the ticket included in your registration packet to gain entry.** This is also the venue for the banquet on Wednesday evening. Light refreshments will be served at the Panel on Monday evening. This panel is open to all attendees.

The reception on the Monday evening will be held in the National Gallery of Canada, 380 Sussex Drive, Ottawa, ON K1N 9N4. This is a 700m walk north along Sussex Drive, on the left of the road. Entrance to the reception is also by ticket only, so please remember to bring your tickets. If you have not yet registered on Monday, you can pick up your tickets if you bring your registration receipt to the reception.



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VTC2010-Fall Technical Programme

Tuesday 7 September 2010

Tuesday 7 September 2010 11:00-12:30 Quebec

1A: Wireless Sensor Networks I

Chair: Frank Oldewurtel, RWTH Aachen University, Germany

1 Diffusion Based Self-deployment Algorithm for Mobile Sensor Networks

Muhammad Tariq, Waseda University, Japan; Zhenyu Zhou, Waseda University, Japan; Yong-Jin Park, Waseda University, Japan; and Takuro Sato, Waseda University, Japan

2 Randomized Robot-assisted Relocation of Sensors for Coverage Repair in Wireless Sensor Networks

Greg Fletcher, University of Ottawa, Canada; Xu Li, University of Ottawa, Canada; Amiya Nayak, University of Ottawa, Canada; and Ivan Stojmenovic, University of Ottawa, Canada

3 Evaluating On-Demand Data Collection with Mobile Elements in Wireless Sensor Networks

Liang He, University of Victoria, Canada; Yanyan Zhuang, University of Victoria, Canada; Jianping Pan, University of Victoria, Canada; and Jingdong Xu, Nankai University, China

4 Optimized Power Allocation in Nonlinear Sensor Networks via Semidefinite Programming

Umar Rashid, University of New South Wales, Australia; Hoang Duong Tuan, University of New South Wales, Australia; and Ha Hoang Kha, University of New South Wales, Australia

5 A Sensor Selection Method for Target Tracking in Wireless Sensor Networks using Quantized Variational Filtering

Majdi Mansouri, University of Technology of Troyes, UTT, France; Hichem Snoussi, University of Technology of Troyes, UTT, France; and Cédric Richard, Université de Nice Sophia-Antipolis, France

Tuesday 7 September 2010 11:00-12:30 Provinces I

1B: Propagation and Channel Modeling

Chair: Saeed S. Ghassemzadeh, AT&T Research Labs

1 A Novel 3D Regular-Shaped Geometry-Based Stochastic Model for Non-Isotropic MIMO Mobile-to-Mobile Channels

Xiang Cheng, Heriot-Watt University, United Kingdom; Cheng-Xiang Wang, Heriot-Watt University, United Kingdom; Yi Yuan, Heriot-Watt University, United Kingdom; David Laurenson, The University of Edinburgh, United Kingdom; and Xiaohu Ge, Huazhong University of Science and Technology, China

2 Analysis of Channel Parameters for Different Antenna Configurations in Vehicular Environments

Moritz Schack, TU Braunschweig, Germany; Daniel Kornek, Leibniz Universitaet Hannover, Germany; Eric Slotke, Leibniz Universitaet Hannover, Germany; and Thomas Kürner, TU Braunschweig, Germany

3 Fading Channel Modeling for Fixed Mobile Terminal in Outdoor NLOS Environment

Yoshichika Ohta, Softbank Telecom Corp., Japan; and Teruya Fujii, Softbank Telecom Corp., Japan

4 Experimental Study of Mobile Propagation Loss Correction Formula for a Slope Terrain Area

Takahiro Fujitani, Okayama University, Japan; Shigeru Tomisato, Okayama University, Japan; and Masaharu Hata, Okayama University, Japan

5 A Study on Polarimetric Properties of Scattering from Building Walls

Enrico Maria Vitucci, University of Bologna, Italy; Francesco Mani, UCL, Belgium; Vittorio Degli-Esposti, University of Bologna, Italy; and Claude Oestges, UCL, Belgium

Tuesday 7 September 2010 11:00-12:30 Provinces II

1C: Cognitive Radio MAC and PHY

Chair: Attahiru Alfa, University of Manitoba, Canada

1 Cooperative Multichannel MAC for Cognitive Radio Networks

Mooi Choo Chuah, Lehigh University, United States; and Wei Chen, Lehigh University, United States

2 Performance Analysis of a CSMA/CA based MAC Protocol for Cognitive Radio Networks

Tae Ok Kim, Korea University, Korea, Republic of; Attahiru S. Alfa, University of Manitoba, Canada; and Bong Dae Choi, Korea University, Korea, Republic of

3 Saturated Throughput of a Cognitive IEEE 802.15.3c MAC in the Directional Contention Access Period

David Tung Chong Wong Wong, Institute for Infocomm Research, Singapore; and Francois Chin, Institute for Infocomm Research, Singapore

4 Impact of Channel Knowledge on Cognitive Radio System Capacity

Pawel Dmochowski, Victoria University of Wellington, New Zealand; Himal Suraweera, University of Singapore, Singapore; Peter Smith, University of Canterbury, New Zealand; and Mansoor Shafi, Telecom New Zealand, New Zealand

5 An Interweave Cognitive Radio System Based on the Hierarchical 2D-Spread MC-DS-CDMA

Chih-Wen Chang, National Cheng Kung University, Taiwan; and Chien-Cheng Kuo, National Cheng Kung University, Taiwan

Tuesday 7 September 2010 11:00-12:30 Governor General I

1D: Coordinate Multicell Processing

Chair: Witold Krzymien, University of Alberta, Canada

1 Coordinated SINR Balancing Techniques for Multi-Cell Downlink Transmission

Seok-Hwan Park, Korea University, Korea, Republic of; Haewook Park, Korea University, Korea, Republic of; and Inkyu Lee, Korea University, Korea, Republic of

2 Multicell LMMSE Filtering Capacity under Correlated Multiple BS Antennas

Symeon Chatzinotas, University of Luxembourg, Luxembourg; Muhammad Ali Imran, University of Surrey, United Kingdom; Reza Hoshyar, University of Surrey, United Kingdom; and Bjorn Ottersten, University of Luxembourg, Luxembourg

3 Multi-Cell Beamforming Under Per-Cell Power Constraints

Jiann-Ching Guey, Ericsson Research, United States; Abdulrauf Hafeez, Ericsson Research, United States; Anders Furuskar, Ericsson Research, Sweden; and Per Skillermark, Ericsson Research, Sweden

4 Joint and Distributed Linear Precoding for Centralised and Decentralised Multicell Processing

Rong Zhang, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

5 Feedback Interval Control in Wireless Multi-Cell MIMO Systems

Hui Xiao, Fujitsu Laboratories of Europe Ltd. (FLE), United Kingdom; Luciano Sarperi, Fujitsu Laboratories of Europe Ltd. (FLE), United Kingdom; and Sunil Vadgama, Fujitsu Laboratories of Europe Ltd. (FLE), United Kingdom

Tuesday 7 September 2010 11:00-12:30 Governor General II

1E: Cooperative Communications I

Chair: Gerhard Bauch,

1 Performance Comparison of BICM-ID and BILDPCM-ID based Cooperative Network

Nandana Rajatheva, Asian Institute of Technology, Thailand; Shujaat Tanoli, Asian Institute of Technology, Thailand; and Imran Khan, Asian Institute of Technology, Thailand

2 On the Performance of Dual-Hop Fixed Gain Relaying Systems over Composite Multipath/Shadowing Channels

Imène Trigui, INRS EMT, Canada; Sofiène Affes, INRS EMT, Canada; and Alex stéphenne, INRS EMT, Canada

3 Adaptive Cooperation via Relay Selection with Improved Diversity-Multiplexing Tradeoff

Qi Zhichao, Beijing University of Posts and Telecommunications, China; Zhang Jianhua, Beijing University of Posts and Telecommunications, China; Liu Yi, Beijing University of Posts and Telecommunications, China; and Li Xiaofan, Beijing University of Posts and Telecommunications, China

4 Outage Analysis of Space Time Block Coding MIMO Cooperative System with Amplify-and-Forward Scheme

Abderrazak Abdaoui, University of Technology of Troyes, France; Salama Ikki, University Of Waterloo, Canada; Mohamed Hossam Ahmed, Memorial University of New Foundland, Canada; and Eric Châtelet, University of technology of Troyes, France

5 Selection Diversity with Multiple Amplify-and-Forward Relays in Nakagami-m Fading Channels

Phee Lep Yeoh, University of Sydney, Australia; Maged ElKashlan, CSIRO ICT Centre, Australia; and Iain B. Collings, CSIRO ICT Centre, Australia

Tuesday 7 September 2010 11:00-12:30 Governor General III

1F: Intelligent Transportation Systems

Chair: Martin Braun, Karlsruhe Institute of Technology

1 Adaptive Traffic Light Control in Wireless Sensor Network-based Intelligent Transportation System

Binbin Zhou, The Hong Kong Polytechnic University, Hong Kong; Jiannong Cao, The Hong Kong Polytechnic University, Hong Kong; Xiaoqin Zeng, Hohai University, China; and Hejun Wu, Sun Yat-sen University, China

2 A Novel Digital Coded Track Signal—ITRS Based on TVM430

Yong Kong, State Key Laboratory of Rail Traffic Control Safety, China; Zhen-Hui Tan, State Key Laboratory of Rail Traffic Control Safety, China; Pu-Xuan Du, School of Electronic Information Engineering, China; and Xiao-Qing Jiang, Patent Examination Cooperation Center of State Intellectual Property rights Office, China

3 A Study of Real-Time Data Transmission Model of Train-to-Ground Control in High-Speed Railways

Yan Yang, Beijing Jiaotong University, China; Zheng-quan Huang, Beijing University of Posts and Telecommunications, China; Zhang-dui Zhong, Beijing Jiaotong University, China; and Xin Fu, Beijing Jiaotong University, China

4 A Torque Control Strategy with Charge Buffer for Parallel Hybrid Electric Vehicle

Xi Huang, Peking University, China; Ying Tan, Peking University, China; and Xingui He, Peking University, China

5 Electric Vehicles Network with Nomadic Portable Charging Stations

Zheng Li, University of Delaware, United States; Zafer Sahinoglu, Mitsubishi Electric Research Laboratories, United States; Zhifeng Tao, Mitsubishi Electric Research Laboratories, United States; and Koon Hoo Teo, Mitsubishi Electric Research Laboratories, United States

Tuesday 7 September 2010 11:00-12:30 Nunavut

1G: Cooperative Networking

Chair: Dusit Niyato, Nanyang Technological University

1 An Opportunistic Spectrum Scheduling Scheme for Multi-channel Cognitive Radio Networks

Vamsi Krishna Tumuluru, Nanyang Technological University, Singapore; Ping Wang, Nanyang Technological University, Singapore; and Dusit Niyato, Nanyang Technological University, Singapore

2 BS-Cooperative Scheduler for a Multi-Site Single-User MIMO Cellular System

Shoji Kaneko, KDDI R&D Laboratories, Inc, Japan; Masashi Fushiki, KDDI R&D Laboratories, Inc, Japan; Masayuki Nakano, KDDI R&D Laboratories, Inc, Japan; and Yoji Kishi, KDDI R&D Laboratories, Inc, Japan

3 Dominant Users Grouping Algorithm for Multiple RAUs-UEs Coordination in DAS System

Xinying Gao, DOCOMO Beijing Communications Laboratories Co., Ltd, China; Anxin Li, DOCOMO Beijing Communications Laboratories Co., Ltd, China; Yuan Yan, DOCOMO Beijing Communications Laboratories Co., Ltd, China; and Hidetoshi Kayama, DOCOMO Beijing Communications Laboratories Co., Ltd, China

4 An Effective Uplink Power Control Scheme in CoMP Systems

Yang Shan, Beijing University of Posts and Telecommunications, China; Cui Qimei, Beijing University of Posts and Telecommunications, China; Huang Xueqing, Beijing University of Posts and Telecommunications, China; and Tao Xiaofeng, Beijing University of Posts and Telecommunications, China

5 QoS-guaranteed Multi-cell Coordinated Power Control Considering Base Station Cooperative Transmission

Kenji Hoshino, Softbank Mobile Corp., Japan; and Teruya Fujii, Softbank Mobile Corp., Japan

Tuesday 7 September 2010 11:00-12:30 Nova Scotia

1H: Heterogeneous Wireless Networks

Chair: Abbas Jamalipour, University of Sydney

1 Group Mobility Management for Vehicular Area Networks Roaming between Heterogeneous Networks

Kumudu Munasinghe, University of Sydney, Australia; and Abbas Jamalipour, University of Sydney, Australia

2 A Rate Allocation Scheme for Multi-user over Heterogeneous Wireless Access Networks

Huifang Chen, Zhejiang University, China; Xudong Ding, Zhejiang University, China; Zheng Wang, Zhejiang University, China; and Lei Xie, Zhejiang University, China

3 A Simulation Framework for Performance Evaluation of Network Selection Algorithms in Heterogeneous Wireless Networks

Abdul Hasib, Universiti Sains Malaysia, Malaysia; and Abraham Fapojuwo, University of Calgary, Canada

4 Cross-layer Adaptation with Coordinated Scheduling for Heterogeneous Wireless Networks

Guangquan Chen, Beijing University of Posts and Telecommunications, China; Mei Song, Beijing University of Posts and Telecommunications, China; Yong Zhang, Beijing University of Posts and Telecommunications, China; and Junde Song, Beijing University of Posts and Telecommunications, China

5 Network Economics Considerations for Incremental Data Services in Heterogeneous Wireless Wide Area Networks
Dilip Krishnaswamy, Qualcomm, United States

Tuesday 7 September 2010 11:00-12:30 Alberta

11: Multi-hop Wireless Networks

Chair: Jun Cai, University of Manitoba

- 1 Balance the Trade-off Between the Accessibility and Performance of Distributed Routing Schemes in Multi-hop Wireless Networks**
Weiwei Wang, University of Manitoba, Canada; Jun Cai, University of Manitoba, Canada; and Attahiru S. Alfa, University of Manitoba, Canada
- 2 On the Capacity of Multi-hop Wireless Networks with Heterogeneous Antennas**
Osama Bazan, Ryerson University, Canada; and Muhammad Jaseemuddin, Ryerson University, Canada
- 3 QoS and Flow Management for Future Multi-Hop Mobile Radio Networks**
Rainer Schoenen, Communication Networks (ComNets), RWTH Aachen, FB6, Germany; and Arif Otyakmaz, Communication Networks (ComNets), RWTH Aachen, FB6, Germany
- 4 A Cross-Layer Path Selection Scheme for Video Streaming over Vehicular Ad-Hoc Networks**
Mahdi Asefi, University of Waterloo, Canada; Jon W. Mark, University of Waterloo, Canada; and Xuemin Shen, University of Waterloo, Canada
- 5 Performance of Underwater Ad-Hoc Networks**
Andrej Stefanov, Northeastern University, United States; and Milica Stojanovic, Northeastern University, United States

Tuesday 7 September 2010 11:00-12:30 Confederation

1Pa: Cognitive Radio and Cooperative Communications Posters 1

- 1 A Beamforming Algorithm Based on Interference Pricing for the MISO Interference Channel**
Chengqiang Zhang, Beijing University of Posts and Telecommunications, China; Wenjun Xu, Beijing University of Posts and Telecommunications, China; Zhiqiang He, Beijing University of Posts and Telecommunications, China; Kai Niu, Beijing University of Posts and Telecommunications, China; and Baoyu Tian, Beijing University of Posts and Telecommunications, China
- 2 A Novel Triggered Asynchronous Spectrum Sensing Scheme in Cognitive Radio Networks**
Yang Hu, Beijing University of Posts and Telecommunications, China; Zhiyong Feng, Beijing University of Posts and Telecommunications, China; Zaili Wang, Beijing University of Posts and Telecommunications, China; and Jingqun Song, Beijing University of Posts and Telecommunications, China

Tuesday 7 September 2010 14:00-15:30 Quebec

2A: Wireless Sensor Networks II

Chair: Phone Lin, National Taiwan University, Taiwan

- 1 Optimal Management of Rechargeable Biosensors in Temperature-Sensitive Environments**
Yahya Osais, Carleton University, Canada; Fei Yu, Carleton University, Canada; and Marc St-Hilaire, Carleton University, Canada

3 Adaptive Cooperative Spectrum-Sensing Scheme for Cognitive Radio System

Jungho Myung, KAIST, Korea, Republic of; Keonkook Lee, KAIST, Korea, Republic of; Jinkyu Kang, KAIST, Korea, Republic of; and Joonhyuk Kang, KAIST, Korea, Republic of

4 Cooperative Beamforming and Power Allocation in the Downlink of MIMO Cognitive Radio Systems

Hossein Zamiri-Jafarian, Ferdowsi University of Mashhad, Iran, Islamic Republic of; and Mohssen Abbasi Jannat-Abad, Ferdowsi University of Mashhad, Iran, Islamic Republic of

5 Cooperative Communication in Wireless Uplink Transmissions using Random Network Coding

Kundan Kandhway, University of British Columbia, Canada; Mohammad Mamunur Rashid, University of British Columbia, Canada; and Vijay Bhargava, University of British Columbia, Canada

6 Cutoff Rate Analysis of Amplify-And-Forward Relay System

Kar-Peo Yar, Institute for Infocomm Research, Singapore; Sumei Sun, Institute for Infocomm Research, Singapore; and Paul Ho, Simon Fraser University, Canada

7 Joint Economical and Technical Considerations of Dynamic Spectrum Sharing: A Multi-stage Stackelberg Game

Chungang Yang, Xidian University, China; and Jiandong Li, Xidian University, China

Tuesday 7 September 2010 11:00-12:30 Confederation

1Pb: Vehicular Electronics and Telematics

1 Systematic Model Driven Test of Vehicular Energy Management and Engine Control

Sebastian Siegl, University Erlangen-Nuremberg, Germany; Kai-Steffen Hielscher, University Erlangen-Nuremberg, Germany; Reinhard German, University Erlangen Nuremberg, Germany; and Gerhard Kiffe, AUDI AG, Germany

2 A fast simulation approach to assess the influence of Bluetooth communication on distance control between vehicles

Steven Gillijns, Flanders' Mechatronics Technology Centre, Belgium; Maria Luisa Ruiz de Arbulo Gubía, Flanders' Mechatronics Technology Centre, Belgium; and Marc Engels, Flanders' Mechatronics Technology Centre, Belgium

3 Bridging the Gap between Simulation and Experimentation in Vehicular Networks

Sofiane Khalfallah, Université de Technologie de Compiègne, France; and Bertrand Ducourthial, Université de Technologie de Compiègne, France

4 Schedulability Analysis in Time-Triggered Automotive Real-Time Systems

Christoph Lauer, University of Erlangen-Nuremberg, Germany; Kai-Steffen Hielscher, University of Erlangen-Nuremberg, Germany; Reinhard German, University of Erlangen-Nuremberg, Germany; and Jens Pollmer, Audi AG, Germany

5 Optimal Message Scheduling for the Static Segment of FlexRay

Klaus Schmidt, Cankaya University, Turkey; and Ece G. Schmidt, Middle East Technical University, Turkey

2 Association Schemes in a Wireless Sensor Network with a Cluster Tree Topology

Wenjuan Liu, McMaster University, Canada; Dongmei Zhao, McMaster University, Canada; and Gang Zhu, Beijing Jiaotong University, China

3 Metrics for Performance Prediction of Wireless Sensor Networks

Frank Oldewurtel, RWTH Aachen University, Germany; and Petri Mähönen, RWTH Aachen University, Germany

- 4 A Novel Continuous Object Tracking Scheme for Energy-constrained Wireless Sensor Networks**
Seung-Woo Hong, ETRI, South Korea; Sung-Kee Noh, ETRI, South Korea; Hoyong Ryu, ETRI, South Korea; Euisin Lee, Chungnam National University, South Korea; and Sang-Ha Kim, Chungnam National University, South Korea

- 5 TDMA based Code Dissemination Protocol on an Integrated Positioning and Sensing System**
Phil Ho, CSIRO, Australia; Ren Ping Liu, CSIRO, Australia; and Mark Hedley, CSIRO, Australia

Tuesday 7 September 2010 14:00-15:30 Provinces I

2B: Short-range and Indoor Wireless communications

Chair: Luis M. Correia, IST/IT - Technical University of Lisbon

- 1 Implementation of A Low Complexity UWB Transmitted Reference Pulse Cluster System**
Shuai He, University of Victoria, Canada; and Xiaodai Dong, University of Victoria, Canada
- 2 Securing UWB Communications under NLOS Indoor Propagation Conditions**
Jules LeBel, Communications Research Centre Canada, Canada; and Dino Cule, Communications Research Centre Canada, Canada
- 3 A Spatial Correlation Model for Shadow Fading in Indoor Multipath Propagation**
Nam-Ryul Jeon, Seoul National University, Korea, Republic of; Kyung-Hoe Kim, Department of Electrical Engineering INMC, Korea, Republic of; Jung-Hwan Choi, Department of Electrical Engineering INMC, Korea, Republic of; and Seong-Cheol Kim, Department of Electrical Engineering and INMC, Korea, Republic of

- 4 A Statistical Model to Characterize User Influence in Body Area Networks**
Carla Oliveira, Instituto de Telecomunicações/Instituto Superior Técnico-Technical University of Lisbon, Portugal; and Luís M. Correia, Instituto de Telecomunicações/Instituto Superior Técnico-Technical University of Lisbon, Portugal

- 5 Measuring Radiation Characteristics of Remote Keyless Entry Transmitters**
Joseph Brunett, University of Michigan, United States

Tuesday 7 September 2010 14:00-15:30 Provinces II

2C: Spectrum Awareness and Primary User Detection I

Chair: Husheng Li, University of Tennessee, USA

- 1 Cognitive Radios in Cooperative Environment: Detection, Sensing and Clustering of Spectral Bands**
Duy Duong Nguyen, Nanyang Technological University, Singapore; A S Madhukumar, Nanyang Technological University, Singapore; Surya Dharma Tio, Nanyang Technological University, Singapore; and Boon Chong Ng, Nanyang Technological University, Singapore
- 2 Linear Hard Decision Combining for Cooperative Spectrum Sensing in Cognitive Radio Systems**
Dong Chan Oh, Seoul National University, Korea, Republic of; Heui Chang Lee, Seoul National University, Korea, Republic of; and Yong Hwan Lee, Seoul National University, Korea, Republic of
- 3 Cyclostationary Feature Based Quickest Spectrum Sensing in Cognitive Radio Systems**
Husheng Li, The University of Tennessee, United States
- 4 Spectrum Sensing for OFDM-Based Cognitive Radio**
Simin Bokharaiee Najafee, University of Manitoba, Canada; Ha H Nguyen, University of Saskatchewan, Canada; and Ed Shwedyk, University of Manitoba, Canada

- 5 Robust Spectrum Sensing and User Identification for PCP-OFDM Signal Using Noise Insensitive Threshold**
Hao Li, The University of Western Ontario, Canada; Xianbin Wang, The University of Western Ontario, Canada; and Jean-Yves Chouinard, Laval University, Canada

Tuesday 7 September 2010 14:00-15:30 Governor General I

2D: Mobile Services

Chair: Eiji Kamioka, Shibaura Institute of Technology, Japan

- 1 Wellness Support Using Mobile Handsets**
Aravind Kailas, DOCOMO USA Labs, United States; Chia-Chin Chong, DOCOMO USA Labs, United States; and Fujio Watanabe, DOCOMO USA Labs, United States
- 2 LBS-p: A LBS Platform Supporting Online Map Services**
Yingwei Luo, Peking University, China; Xiaolin Wang, Peking University, China; and Xiao Pang, Peking University, China
- 3 Byte-Map: A Novel Mobile Map Format Using Two-Byte Coordinates**
Yingwei Luo, Peking University, China; Xiaolin Wang, Peking University, China; and Xiao Pang, Peking University, China
- 4 Granular Quantifying Traffic States Using Mobile Probes**
Quang Tran, Shibaura Institute of Technology, Japan; and Eiji Kamioka, Shibaura Institute of Technology (SIT), Japan
- 5 Arrival Angular Profile Modeling at Mobile Station for Cellular Systems**
Hideki Omote, Softbank Telecom Corp., Japan; Yoshichika Ohta, Softbank Telecom Corp., Japan; and Teruya Fujii, Softbank Telecom Corp., Japan

Tuesday 7 September 2010 14:00-15:30 Governor General II

2E: Space-Time Coding

Chair: Ha H. Nguyen, University of Saskatchewan, Canada

- 1 Space-Time Codes with Block-Orthogonal Structure and Their Simplified ML and Near-ML Decoding**
Tian Peng Ren, National University of Defense Technology, China; Yong Liang Guan, Nanyang Technological University, Singapore; Chau Yuen, Institute for Information Research, Singapore; and Er Yang Zhang, National University of Defense Technology, China
- 2 MIMO-CDMA Systems Using STBC-Based Permutation Spreading**
Min Shi, University of Ottawa, Canada; Claude D'Amours, University of Ottawa, Canada; Abbas Yongacoglu, University of Ottawa, Canada; and Adel Omar Dahmane, Université de Québec a Trois Rivieres, Canada
- 3 A Unified MIMO Architecture Subsuming Space Shift Keying, OSTBC, BLAST and LDC**
Shinya Sugiura, University of Southampton, United Kingdom; Sheng Chen, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom
- 4 Space-Time Block Codes Based on Diagonalized Walsh-Hadamard Transform with Simple Decoupling**
Jacek Ilow, Dalhousie University, Canada; and Mohan Baro, Dalhousie University, Canada
- 5 Performance Analysis of Alamouti Space Time Coding with QAM in Imperfect Channel Estimation**
Huiling Zhu, University of Kent, United Kingdom; and Bin Xia, Huawei Technologies, China

Tuesday 7 September 2010 14:00-15:30 Governor General III

2F: Modulation I

Chair: Shahram Yousefi,

- 1 A Comparison between Coded OFDM/OQAM and CP-OFDM Modulations over Multipath Channels**
Gaëtan Ndo, France Télécom, Orange Labs, France; Pierre Siohan, France Télécom, Orange Labs, France; and Marie-Hélène Hamon, France Télécom, Orange Labs, France

2 A Layered Modulation OFDM Scheme using Differential Symbols as Pilots

Guanping Lu, Tsinghua University, China; Jun Wang, Tsinghua University, China; Chao Zhang, Tsinghua University, China; and Zhaocheng Wang, Tsinghua University, China

3 Adaptive Modulation and Space-Time Coding Scheme based on Constellation-constrained Capacity

Li Xu, University of Science and Technology of China, China; Jinkang Zhu, University of Science and Technology of China, China; and Ling Qiu, University of Science and Technology of China, China

4 Quantization Noise Suppression for Envelope Pulse-Width Modulation (EPWM) Transmitters

Edwin Umali, University of Electro-Communications, Japan; Shinsuke Yokozawa, University of Electro-Communications, Japan; and Yasushi Yamao, University of Electro-Communications, Japan

5 Hybrid Multi-Dimensional Modulation for Gaussian and Fading Channels

Tze Wong, Wichita State University, United States; Hyuck Kwon, Wichita State University, United States; and Amitav Mukherjee, University of California Irvine, United States

Tuesday 7 September 2010 14:00-15:30 Nunavut

2G: OFDM I

Chair: Mohamed Moustafa,

1 Bayesian Joint Estimation of CFO and Doubly Selective Channels in MIMO-OFDM Transmissions

Hung Nguyen-Le, McGill University, Canada; Tho Le-Ngoc, McGill University, Canada; and Nghi Tran, McGill University, Canada

2 CF-Based Adaptive PAPR Reduction Method for Precoded MIMO-OFDM Signals in Frequency-Selective Faded Channel

Yoshinari Sato, Tokyo University of Science, Japan; Masao Iwasaki, Tokyo University of Science, Japan; and Kenichi Higuchi, Tokyo University of Science, Japan

3 Compression of Channel State Information for Wireless OFDM Transceivers

Sean Ferguson, McGill University, Canada; Fabrice Labeau, McGill University, Canada; and Alexander Wyglinski, Worcester Polytechnic Institute, United States

4 Joint Channel Impulse Response and Noise-Variance Estimation for OFDM/SLASHSDMA Systems Based on Expectation Maximization

Jiankang Zhang, Zhengzhou University, University of Southampton, United Kingdom; Xiaomin Mu, Zhengzhou University, China; and Lajos Hanzo, University of Southampton, United Kingdom

5 Joint Estimation of IQ Parameters and Channel Response for OFDM Systems

Mohamed Marey, Memorial University, Canada; Motaz Samir, El-Shorouk Academy, Egypt; Octavia Dobre, Memorial University, Canada; Hamid El-Shenawy, El-Shorouk Academy, Egypt; and Adel El-Henawy, El-Shorouk Academy, Egypt

Tuesday 7 September 2010 14:00-15:30 Nova Scotia

2H: CDMA

Chair: Antonis Phasouliotis, University of Manchester

1 User Grouping Algorithm for Power Minimization in MC-CDMA systems

Antonis Phasouliotis, The University of Manchester, United Kingdom; and Daniel K.C. So, The University of Manchester, United Kingdom

2 An Efficient Distributed Power Control with Linear Receivers for Asynchronous DS-CDMA Systems Subject to Propagation Delays

Jose Martin Luna-Rivera, Universidad Autonoma de San Luis Potosi, Mexico; and Daniel U. Campos-Delgado, Universidad Autonoma de San Luis Potosi, Mexico

3 Robust Adaptive Multiuser Detection for CDMA Frequency-Selective Fading Channels

Hongwei Zhou, Imperial College London, United Kingdom; Pei Xiao, Queen's University Belfast, United Kingdom; and Colin Cowan, Queen's University Belfast, United Kingdom

4 A Multiuser Receiver for CDMA Systems with Parity Bit Selected Spreading Sequences

Alireza Mirzaee, University of Ottawa, Canada; and Claude D'Amours, University of Ottawa, Canada

5 Performance of Variable Step Closed Loop Power Control in CDMA High Altitude Platforms Communication Channel

Iskandar Iskandar, Bandung Institute of Technology, Indonesia; Adit Kurniawan, Bandung Institute of Technology, Indonesia; and Mohamad Erick Ernawan, Bandung Institute of Technology, Indonesia

Tuesday 7 September 2010 14:00-15:30 Alberta

2I: OFDMA Wireless Networks

Chair: Geoffrey Messier, University of Calgary

1 Flow-Level Capacity of Fractionally Loaded OFDMA Networks with Proportional Fair Scheduling

Weiwei Wu, The University of Melbourne, Australia; and Taka Sakurai, The University of Melbourne, Australia

2 Joint Opportunistic Beamforming and Subcarrier Assignment for Maximization of User Satisfaction in OFDMA Systems

Tarcisio Maciel, Federal University of Ceará, Brazil; Walter Cruz, Federal University of Ceará, Brazil; and Francisco Rodrigo Cavalcanti, Federal University of Ceará, Brazil

3 Low Complexity Novel Methods for Initial Timing Synchronization in Mobile WiMAX OFDMA System

Ahmed Hamza, Alexandria University, Egypt; Essam Sourour, Alexandria University, Egypt; and Said El-Khamy, Alexandria University, Egypt

4 Auction Based Resource Allocation for Balancing Efficiency and Fairness in OFDMA Relay Networks with Service Differentiation

Hui Deng, Tsinghua University, China; Youzheng Wang, Tsinghua University, China; and Jianhua Lu, Tsinghua University, China

5 A Combined Technical and Economic Comparison of Indoor and Outdoor 4G OFDMA Infrastructure

Vincent Yeung, University of Calgary, Canada; Geoffrey Messier, University of Calgary, Canada; and Roman Nemish, TekTelic Communications, Canada

Tuesday 7 September 2010 14:00-15:30 Confederation

2P: Multiple Antenna Systems and Space-Time Processing Posters

1 Measurement-Based Evaluation of a Multiuser MIMO System in an Indoor Time-Varying Environment

Yasutaka Ogawa, Hokkaido University, Japan; Toshihiko Nishimura, Hokkaido University, Japan; Takeo Ohgane, Hokkaido University, Japan; and Huu Phu Bui, Hochiminh City University of Natural Sciences, Viet Nam

2 Combining Radio Transmission with Filters for Pedestrian Safety: Experiments and Simulations

Alexander Flach, University of Kassel, Germany; and Klaus David, University of Kassel, Germany

3 Distributed Space-Time Code using Precoding for Cellular Systems

Sara Teodoro, Instituto de Telecomunicações, Portugal; Adão Silva, Instituto de Telecomunicações, Portugal; João M. Gil, Instituto de Telecomunicações, Portugal; and Atílio Gameiro, Instituto de Telecomunicações, Portugal

4 EM Channel Estimation and Data Detection for MIMO-CDMA Systems over Slow-Fading Channels

Ayman Assra, Concordia University, Canada; Walaa Hamouda, Concordia University, Canada; and Amr A. Youssef, Concordia University, Canada

5 DVB-S Signal Tracking Techniques for Mobile Phased Arrays

Koen Blom, University of Twente, Netherlands; Marcel van de Burgwal, University of Twente, Netherlands; Kenneth Rovers, University of Twente, Netherlands; André Kokkeler, University of Twente, Netherlands; and Gerard Smit, University of Twente, Netherlands

6 MIMO Transceiver Combining Space-Frequency Spreading and Block-Coding

André Almeida, Federal University of Ceará, Brazil; and Gérard Favier, I3S Laboratory / CNRS, France

7 Symbol Error Rate Analysis and Antenna Selection in Limited Feedback Distributed Antenna Systems

Ningbo Zhang, Key Laboratory of Universal Wireless Communication, China; Guixia Kang, Key Laboratory of Universal Wireless Communication, China; Yanyan Guo, Key Laboratory of Universal Wireless Communication, China; and Xin Gui, Key Laboratory of Universal Wireless Communication, China

8 Analytical Results for the Performance of MIMO Systems in Frequency Selective Fading Channels

Rongtao Xu, State Key Laboratory of Rail Traffic Control Safety, China; Jiann-Mou Chen, Hwa Hsia Institute of Technology, Taiwan; and Zhou Su, Waseda University, Japan

9 Codebook-based Concatenating Precoder Search Strategies for Multi-Cell Joint Processing

Ping-Heng Kuo, ITRI, Taiwan; Hsiao-Lan Chiang, ITRI, Taiwan; and Pang-An Ting, ITRI, Taiwan

10 Minimum SER-based Power Allocation Scheme in Distributed MIMO Systems

Xin Gui, Key Laboratory of Universal Wireless Communication, China; Guixia Kang, Key Laboratory of Universal Wireless Communication, China; Ningbo Zhang, Key Laboratory of Universal Wireless Communication, China; and Yanyan Guo, Key Laboratory of Universal Wireless Communication, China

11 Partial Joint Processing for Frequency Selective Channels

Tilak Rajesh Lakshmana, Chalmers University of Technology, Sweden; Carmen Botella, Chalmers University of Technology, Sweden; Tommy Svensson, Chalmers University of Technology, Sweden; Xiaodong Xu, Beijing University of Posts and Telecommunications, China; Jingya Li, Beijing University of Posts and Telecommunications, China; and Xin Chen, Beijing University of Posts and Telecommunications, China

Tuesday 7 September 2010 16:00-17:30 Quebec

3A: Routing

Chair: Ai-chun Pang, National Taiwan University, Taiwan

1 MI-VANET: A New Mobile Infrastructure Based VANET Architecture for Urban Environment

Jie Luo, Peking University, China; Xinxing Gu, Peking University, China; Tong Zhao, Peking University, China; and Wei Yan, Peking University, China

2 Fuzzy Logic Aided Dynamic Source Routing in Cross-Layer Operation Assisted Ad Hoc Networks

Jing Zuo, University of Southampton, United Kingdom; Soon Xin Ng, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

3 Reliable Gossiping in Urban Environments

Miklós Máté, Budapest University of Technology and Economics, Hungary; and Roland Vida, Budapest University of Technology and Economics, Hungary

4 Enhanced Termination Condition for Deterministic Broadcasting Protocols in Mobile Ad Hoc Networks

Wilson Woon, The University of Hong Kong, Hong Kong; and Kwan L. Yeung, The University of Hong Kong, Hong Kong

5 Improved Gradient-Based Micro Sensor Routing Protocol with Node Sleep Scheduling in Wireless Sensor Networks

Deyun Gao, Beijing Jiaotong University, China; Tao Zheng, Beijing Jiaotong University, China; Sidong Zhang, Beijing Jiaotong University, China; and Oliver Yang, University of Ottawa, Canada

Tuesday 7 September 2010 16:00-17:30 Provinces I

3B: Channel Sounding and Testbeds

Chair: Robert Bultitude, CRC

1 60 GHz-Ultrawideband Real-Time Multi-Antenna Channel Sounding for Multi Giga-bit/s Access

Alexis Paolo Garcia Ariza, TU-Ilmenau, Germany; Wim Kotterman, TU-Ilmenau, Germany; Rudolf Zetik, TU-Ilmenau, Germany; Martin Kmec, TU-Ilmenau, Germany; Robert Müller, TU-Ilmenau, Germany; Frank Wollenschläger, TU-Ilmenau, Germany; Reiner S. Thomä, TU-Ilmenau, Germany; and Uwe Trautwein, MEDAV GmbH, Germany

2 Ultrawideband Channel Sounding within an Airbus 319

Alexis Paolo Garcia Ariza, TU-Ilmenau, Germany; Rudolf Zetik, TU-Ilmenau, Germany; Guowei Shen, TU-Ilmenau, Germany; Robert Müller, TU-Ilmenau, Germany; Reiner S. Thomä, TU-Ilmenau, Germany; Martin Bachhuber, Diehl Aerospace GmbH, Germany; Robert Weigel, University of Erlangen, Germany; and Tim Fuss, Airbus Operations GmbH, Germany

3 Comparison Between Time and Frequency Domain MIMO Channel Sounders

Concepcion Garcia-Pardo, Universidad Politecnica de Cartagena, Spain; Jose-Maria Molina-Garcia-Pardo, Universidad Politecnica de Cartagena, Spain; José-Victor Rodríguez, Universidad Politecnica de Cartagena, Spain; and Leandro Juan-Llacer, Universidad Politecnica de Cartagena, Spain

4 MIMO-OFDM Throughput Performances on MIMO Antenna Configurations Using LTE-based Testbed with 100 MHz Bandwidth

Noriaki Miyazaki, KDDI R&D Laboratories, Inc., Japan; Shinobu Nanba, KDDI R&D Laboratories, Inc., Japan; and Satoshi Konishi, KDDI R&D Laboratories, Inc., Japan

5 Identifying and Modelling Multipath Clusters in Propagation Measurement Data

Ghassan Dahman, Carleton University, Canada; Robert Bultitude, Communications Research Centre, Canada; and Roshdy Hafez, Carleton University, Canada

Tuesday 7 September 2010 16:00-17:30 Provinces II

3C: Spectrum Awareness and Primary User Detection II

Chair: Shabnam Sodagari, The Pennsylvania State University, USA

1 On Coherent versus Non-Coherent Spectrum Sensing in OFDM Systems

Andreas Müller, University of Bristol, United Kingdom; Robert Piechocki, University of Bristol, United Kingdom; Justin Coon, Toshiba Research Europe Ltd., United Kingdom; and Christophe Andrieu, University of Bristol, United Kingdom

2 Cooperative Spectrum Sensing and Communication in Cognitive Radio Networks

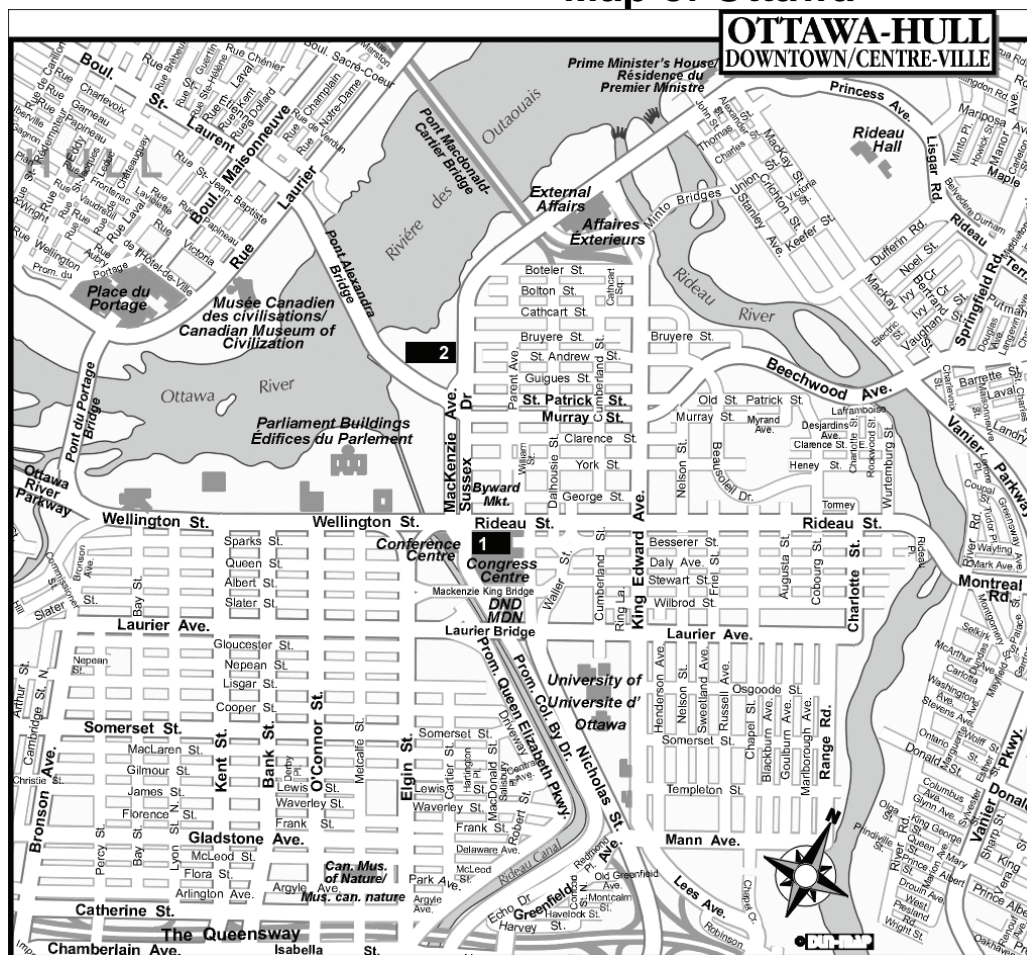
Zhenzhen Gao, Xi'an Jiaotong University, China; Shihua Zhu, Xi'an Jiaotong University, China; Xuewen Liao, Xi'an Jiaotong University, China; and Jing Xu, Xi'an Jiaotong University, China

Quebec (A)	Provinces I (B)	Provinces II (C)	Governor General I (D)	Governor General 2 (E)	Governor General 3 (F)	Nunavut (G)	Nova Scotia (H)	Alberta (I)	Confederation I (POSTERS)
MONDAY 6 September									
8:00-17:00	Registration (Confederation I Foyer)								
9:00-17:00	Workshops and Tutorials: See separate program								
18:00-21:30	Welcome Reception (National Gallery of Canada, 380 Sussex Drive, Ottawa, ON K1N 9N4)								
TUESDAY 7 September									
7:30-17:30	Registration (Confederation I Foyer)								
8:30-10:30	Opening Plenary : Matt Bross, Global CTO Huawei Technologies Co. Ltd. and Alex Yuvovic, VP Communications Research Center Canada (Confederation II/III)								
10:30-11:00	Coffee and Exhibits (Confederation I)								
11:00-12:30	Wireless Sensor Networks I	Propagation and Channel Modeling	Cognitive Radio MAC and PHY	Coordinate Multicell Processing	Intelligent Transportation Systems	Cooperative Networking	Heterogeneous Wireless Networks	Multi-hop Wireless Networks	Cognitive Radio & Cooperative Comms 1; Vehicular/Electronics & Telematics
12:30-14:00	Lunch (Confederation II/II)								
14:00-15:30	Wireless Sensor Networks II	Short-range and Indoor Wireless communications	Spectrum Awareness and Primary User Detection I	Mobile Services	Space-Time Coding	Modulation I	CDMA	OFDMA Wireless Networks	Multiple Antenna Systems and Space-Time Processing
15:30-16:00	Coffee and Exhibits (Confederation I)								
16:00-17:30	Routing	Channel Sounding and Testbeds	Spectrum Awareness and Primary User Detection II	Energy Efficiency in Mobile and Wireless Communications	Mobile Satellite & Positioning Systems	MIMO Interference Channels	Non-safe Vehicle Applications	Diversity Techniques	Transmission Technologies I
18:00-20:00	Panel I – Wireless Research: Investment by Industry/Government and Universities (Confederation II/III) Pizza and Beverages will be served								
WEDNESDAY 8 September									
7:30-17:30	Registration (Confederation I Foyer)								
8:30-10:30	VTC Plenary : Jan Farjh, VP Ericsson Research and Adam Drobot, CTO, Telcordia (Confederation II/III)								
10:30-11:00	Coffee and Exhibits (Confederation I)								
11:00-12:30	Cooperative Communications and Protocols	Power and Resource Allocation in Spectrum Sharing	Indoor Positioning	MIMO Detection	OFDM II	Coding and Modulation	Handover in Wireless Networks II	Relay in Wireless Networks	Transmission Technologies II
12:30-14:00	Performance Analysis	Novel Cognitive Radio / Dynamic Spectrum Access Paradigms I	Relaying I	MIMO Precoding	Modulation II	Iterative Processing	Resource Allocation	LTE Wireless Networks	Wireless Access
15:30-16:00	Coffee and Exhibits (Confederation I)								
16:00-17:30	Cooperative Communications II	Mobile Application Technologies	Locationing & Tracking I	MIMO Systems	Relay Networks	Interference Mitigation	Interference Coordination and Management	Load Balancing in Wireless Networks	Transmission Technologies III; Ad-Hoc & Sensor Networks
18:00-21:00	VTC2010-Fall Banquet and Presentations with Aboriginal Dancers (Confederation II/III)								
THURSDAY 9 September									
7:30-17:30	Registration (Confederation I Foyer)								
8:30-10:30	Panel II – A Reality Check of Vehicular Networking: Where We Are and What Lies Ahead (Confederation II)								
10:30-11:00	Panel III – Directions for Wireless Research: Can We Meet Industry's Wants and Needs? (Confederation III)								
11:00-12:30	Propagation Issues in Cooperative Communications	Relaying II	Locationing & Tracking II	Multuser MIMO Precoding	Equalization and Detection	Coding	Security and Privacy in VANETs	Handover in Wireless Networks I	Cognitive Radio and Cooperative Communications 2
12:30-14:00	Lunch (Confederation II/III)								
14:00-15:30	Network Coding & MAC	MIMO Channel Propagation and Capacity	Relaying III	MIMO Capacity	Channel Estimation I	Multuser	Vehicular Communication Networks	Medium Access Control	Wireless Networks
15:30-16:00	Coffee and Exhibits (Confederation I)								
16:00-17:30	Protocols and Algorithms for Vehicular Networks	Novel Cognitive Radio / Dynamic Spectrum Access Paradigms II	Spectrum Awareness and Primary User Detection III	MIMO-OFDM	Channel Estimation II	Network Modelling and Evaluation	Performance Analysis in Wireless Networks	Mobile Communications	Antennas and Propagation

Program for Monday 6 September

	New Foundland	Nova Scotia	New Brunswick	Provinces I	Provinces II	Quebec
MONDAY 6 September						
8:00-17:00	Registration (Confederation I Foyer)					
9:00-10:30	T1: Wireless Broadband in 2020: Looking through the IMT-Advanced Eyehole	T3: Cooperative Vehicle Safety Systems Enabled by Wireless Networks	T4: Vehicular Ad Hoc Networks and Integrated Intelligent Transportation Systems		GreeNet Workshop	DMMTS Digital Mobile
10:30-11:00	Coffee Break (Provinces Foyer)					
11:00-12:30	T1: Wireless Broadband in 2020: Looking through the IMT-Advanced Eyehole	T3: Cooperative Vehicle Safety Systems Enabled by Wireless Networks	T4: Vehicular Ad Hoc Networks and Integrated Intelligent Transportation Systems		GreeNet Workshop	DMMTS Digital Mobile
12:30-14:00	Lunch Break (no lunch provided)					
14:00-15:30	T5: Enabling Mobile Video Services over WiMAX and LTE	T7: Cooperative Communications	T8: QoS Provisioning in Intelligent Vehicular Networks	Vehicular Electronics Workshop	GreeNet Workshop	DMMTS Digital Mobile
15:30-16:00	Coffee Break (Provinces Foyer)					
16:00-17:30	T5: Enabling Mobile Video Services over WiMAX and LTE	T7: Cooperative Communications	T8: QoS Provisioning in Intelligent Vehicular Networks	Vehicular Electronics Workshop	GreeNet Workshop	DMMTS Digital Mobile

Map of Ottawa



1 Westin Ottawa
 2 National Gallery (site of the reception)
 Walk up Sussex Drive and the Gallery is on the left – the walk is about 700m

Map © Government of Canada.

3 Frequency-Domain Coexistence Beacon for the Coexistence of White Space Applications

Seungil Yoon, Georgia Institute of Technology, United States; and Kyutae Lim, Georgia Institute of Technology, United States

4 Novel Approaches to Determine the Optimal Operating Point of Spectrum Sensing in Overlay Spectrum Sharing

Keivan Navaie, Carleton University, Canada; Mohammad Ghadir Khoshkholgh, Tarbiat Modares University, Iran, Islamic Republic of; and Halim Yanikomeroglu, Carleton University, Canada

5 A Novel Blind Diversity Detection Scheme for Multi-antenna Cognitive Radio Spectrum Sensing

AbdulRahman Al-Abbasi, Advanced Wireless Communication Center, Japan; and Takeo Fujii, Advanced Wireless Communication Center, Japan

Tuesday 7 September 2010 16:00-17:30 Governor General I

3D: Energy Efficiency in Mobile and Wireless Communications

Chair: Oliver Holland, Kings College London, UK

1 Energy efficiency of high QoS heterogeneous wireless communication network

Ying Hou, The University of Edinburgh, United Kingdom; and David I. Laursen, The University of Edinburgh, United Kingdom

2 Consumer Attitudes towards Energy Consumption of Mobile Phones and Services

Mikko Heikkinen, Helsinki Institute for Information Technology HIIT, Finland; and Jukka Nurminen, Nokia Research Center, Finland

3 Effect of the Base Station Antenna Beam Tilting on Energy Consumption in Cellular Networks

Pavel Loskot, Swansea University, United Kingdom; Biljana Badic, Swansea University, United Kingdom; Timothy O'Farrell, Swansea University, United Kingdom; and Jianhua He, Swansea University, United Kingdom

4 Optimal Locations of Remote Radio Units in CoMP Systems for Energy Efficiency

Congqing Zhang, Beijing University of Posts and Telecommunications, China; Tiankui Zhang, Beijing University of Posts and Telecommunications, China; Zhimin Zeng, Beijing University of Posts and Telecommunications, China; Laurie Cuthbert, Queen Mary, University of London, United Kingdom; and Yue Chen, Queen Mary, University of London, United Kingdom

5 Optimization of the Efficiency and Linearity in RF Power Amplifiers under Load Variations using a Reconfigurable Matching Network

César Sánchez-Pérez, University of Zaragoza, Spain; Jesús de Mingo, University of Zaragoza, Spain; Paloma García-Dúcar, University of Zaragoza, Spain; Pedro L. Carro, University of Zaragoza, Spain; and Antonio Valdovinos, University of Zaragoza, Spain

Tuesday 7 September 2010 16:00-17:30 Governor General II

3E: Mobile Satellite & Positioning Systems

Chair: Jian Song, Tsinghua University, China

1 An Intelligent QoS Control System for Satellite Networks Based on Markovian Weather Prediction

Kamal Harb, Carleton, Canada; Richard Yu, Carleton, Canada; Pramod Dhakal, Eion Inc., Canada; and Anand Srinivasan, Eion Inc., Canada

2 Performance Improvements of Code Acquisition in Satellite Spread Spectrum Systems

Francesco Benedetto, University of Roma Tre, Italy; Gaetano Giunta, University of Roma Tre, Italy; and Simone Bucci, University of Roma Tre, Italy

3 Encapsulation Requirements for Return Links and Mesh Systems over Satellite

Fabrice Hobaya, TeSA, France; Cédric Baudoin, Thales Alenia Space, France; Emmanuel Dubois, CNES, France; Patrick Gélard, CNES, France;

Emmanuel Chaput, IRIT-ENSEEIH, France; André-Luc Beylot, IRIT-ENSEEIH, France; and Gorry Fairhurst, University of Aberdeen, United Kingdom

4 Joint Code Acquisition and Doppler Frequency Shift Estimation for GPS Signals

Linglong Dai, Tsinghua University, China; Zhaocheng Wang, Tsinghua University, China; Jun Wang, Tsinghua University, China; and Jian Song, Tsinghua University, China

5 Multilevel Codes for Satellite Broadcasting under LMS Channels

Aharon Vargas, Fraunhofer IIS, Germany; Wolfgang H. Gerstacker, Universitaet Erlangen-Nuernberg, Germany; Marco Breiling, Fraunhofer IIS, Germany; and Albert Heuberger, Technische Universitaet Ilmenau, Germany

Tuesday 7 September 2010 16:00-17:30 Governor General III

3F: MIMO Interference Channels

Chair: Tadashi Matsumoto, Japan Advanced Institute of Science and Technology, Japan

1 Transmit Beamforming based Inter-cell Interference Alignment and User Selection with CoMP

Uk Jang, ETRI, Korea, Republic of; Kang Yong Lee, ETRI, Korea, Republic of; Kee Seong Cho, ETRI, Korea, Republic of; and Won Ryu, ETRI, Korea, Republic of

2 An Interference-Aware Precoding Scheme with Other-Cell Interference for Downlink Multi-User MIMO Channel

Shengjie Zhao, Alcatel-Lucent Shanghai Bell, China; Yan Zhao, Alcatel-Lucent Shanghai Bell, China; Huan Sun, Alcatel-Lucent Shanghai Bell, China; Jin Liu, Alcatel-Lucent Shanghai Bell, China; Lu Zhang, Alcatel-Lucent Shanghai Bell, China; and Luoning Gui, Alcatel-Lucent Shanghai Bell, China

3 Exact Bit Error Rate of MIMO MRC Systems with Cochannel Interference and Rayleigh Fading

Amir Ali Basri, Communications Research Centre Canada, Canada

4 A Novel Iterative Interference Alignment Scheme Via Convex Optimization for the MIMO Interference Channel

Hui Shen, Huawei Technologies, China; and Bin Li, Huawei Technologies, China

5 Capacity Study of Virtual MIMO Uplink OFDMA Cellular System with Cochannel Interference

Dazhi Piao, Tsinghua National Laboratory for Information ScienceTechnology; Communication University of China, China; Zhaocheng Wang, Tsinghua National Laboratory for Information ScienceTechnology, China; and Zhixing Yang, Tsinghua National Laboratory for Information Science and Technology, China

Tuesday 7 September 2010 16:00-17:30 Nunavut

3G: Synchronization

Chair: Mohamed Marey,

1 Decision-Directed Carrier Phase and Symbol Timing Recovery for LDPC-Coded Systems

Hua Wang, Beijing Institute of Technology, China; Nan Wu, Beijing Institute of Technology, China; Jingming Kuang, Beijing Institute of Technology, China; and Chaoxing Yan, Beijing Institute of Technology, China

2 Interference-reducing Spreading Code Design for BS-CDMA with Quasi-synchronous Reception

Yue Wang, Toshiba Research Europe Limited, United Kingdom; and Justin Coon, Toshiba Research Europe Limited, United Kingdom

3 Maximum Likelihood Clockless Feedback Phase Recovery for MPSK Signals

Hua Wang, Beijing Institute of Technology, China; Chaoxing Yan, Beijing Institute of Technology, China; Nan Wu, Beijing Institute of Technology,

China; Dewei Yang, Beijing Institute of Technology, China; and Jingming Kuang, Beijing Institute of Technology, China

- 4 Self-Cancellation of Sample Frequency Offset in OFDM Systems in the Presence of Carrier Frequency Offset**
Zhen GAO, Tianjin University, China; and Mary Ann Ingram, Georgia Tech, United States
- 5 Cooperative Acquisition for Distributed Antenna Systems by Exploiting the Difference of Time-delays over Flat-Fading Channels**
Chaojin Qing, University of Electronic Science and Technology of China, China; Shihai Shao, University of Electronic Science and Technology of China, China; Youxi Tang, University of Electronic Science and Technology of China, China; Yi Wang, Corporate Research Dept. Huawei Technologies Co., Ltd., China; and Jiayin Zhang, Corporate Research Dept. Huawei Technologies Co., Ltd., China

Tuesday 7 September 2010 16:00-17:30 Nova Scotia

3H: Non-safety Vehicle Applications

Chair: Xiaodong Lin, University of Ontario Institute of Technology, Canada

- 1 A Fuel-Saving and Pollution-Reducing Dynamic Taxi-Sharing Protocol in VANETs**
Po-Yu Chen, National Tsing Hua University, Taiwan; Je-Wei Liu, National Tsing Hua University, Taiwan; and Wen-Tsuen Chen, National Tsing Hua University, Taiwan
- 2 An IMS based Vehicular Service Platform**
Ivan Lequerica, Telefonica I+D, Spain; Antonio Jesús Ruiz Ruiz, Universidad de Murcia, Spain; Andrés Samuel García Ruiz, Universidad de Murcia, Spain; and Antonio F. Gómez Skarmeta, Universidad de Murcia, Spain
- 3 Fuel-Saving Navigation System in VANETs**
Po-Yu Chen, National Tsing Hua University, Taiwan; Yi-Min Guo, National Tsing Hua University, Taiwan; and Wen-Tsuen Chen, National Tsing Hua University, Taiwan
- 4 Performance Tradeoff Study of Streaming Video among Vehicle**
Funmilayo Lawal, University of Ottawa, Canada; Jun Huang, University of Ottawa, Canada; and Oliver Yang, University of Ottawa, Canada
- 5 Proactive Stop and Start Technology for High Gas Mileage of the Used Car**
Myounghee Son, Electronics & Telecommunications Research Institute, Korea, Republic of; and Byoung-Jun Park, Electronics & Telecommunications Research Institute, Korea, Republic of

Tuesday 7 September 2010 16:00-17:30 Alberta

3I: Diversity Techniques

Chair: Chester (Sungchung) Park, Ericsson Research, Silicon Valley

- 1 Max-Min Fair Resource Allocation for Multiuser Amplify-and-Forward Relay Networks**
Alireza Sharifian, Carleton University, Canada; Petar Djukic, Carleton University, Canada; Halim Yanikomeroglu, Carleton University, Canada; and Jietao Zhang, Huawei Technologies Co., China
- 2 LTE Amplify and Forward Relaying for Indoor Coverage Extension**
Thomas Wirth, Fraunhofer Heinrich Hertz Institute, Germany; Lars Thiele, Fraunhofer Heinrich Hertz Institute, Germany; Thomas Haustein, Fraunhofer Heinrich Hertz Institute, Germany; Oliver Braz, Andrew Wireless Systems GmbH, Germany; and Jörg Stefanik, Andrew Wireless Systems GmbH, Germany
- 3 MIMO Layer Shifting for LTE-Advanced Uplink**
Chester Park, Ericsson Inc., United States; David Hammarwall, Ericsson Inc., Sweden; and George Jöngren, Ericsson Inc., Sweden

- 4 Studying the sum capacity of mobile multiuser diversity systems with feedback errors and delay**
Stefan Valentin, Bell Laboratories, Alcatel-Lucent, Germany; and Thorsten Wild, Bell Laboratories, Alcatel-Lucent, Germany
- 5 Efficient wireless multicast retransmission techniques based on multiple coded packets**
Pedro R. S. Lopes, Wireless Telecom Research Group - GTEL, Brazil; Yuri C. B. Silva, Wireless Telecom Research Group - GTEL, Brazil; and Francisco R. P. Cavalcanti, Wireless Telecom Research Group - GTEL, Brazil

Tuesday 7 September 2010 16:00-17:30 Confederation

3P: Transmission Technologies Posters I

- 1 Cooperative Beamforming Based Selection and Power Allocation for Relay Networks**
Yi Liu, Wireless Technology Innovation Institute, Beijing University of Posts and Telecommunications, China; Jianhua Zhang, Wireless Technology Innovation Institute, Beijing University of Posts and Telecommunications, China; Xiaofan Li, Wireless Technology Innovation Institute, Beijing University of Posts and Telecommunications, China; and Zemin Liu, Beijing University of Posts and Telecommunications, China
- 2 Channel Shortening for Bit Rate Maximization in DMT Communication Systems**
Karima Ragoubi, Institute of Electronics and Telecommunications of Rennes (IETR), France; Maryline Héland, Institute of Electronics and Telecommunications of Rennes (IETR), France; and Matthieu Crussiere, Institute of Electronics and Telecommunications of Rennes (IETR), France
- 3 Simplified temperature compensation technique for digital predistorter using fixed coefficients**
Toshihiro Tango, Toshiba Corporation, Japan; Atsushi Yamaoka, Toshiba Corporation, Japan; Keiichi Yamaguchi, Toshiba Corporation, Japan; and Yasuhiko Tanabe, Toshiba Corporation, Japan
- 4 Dynamic Path Loss Exponent and Distance Estimation in a Vehicular Network using Doppler Effect and Received Signal Strength**
Nima Alam, University of New South Wales, Australia; Asghar Tabatabaie Balaie, University of New South Wales, Australia; and Andrew G. Dempster, University of New South Wales, Australia
- 5 Bad Parameter Indication for Error Concealment in Wireless Multimedia Communication**
Tobias Breddermann, RWTH Aachen University, Germany; Stanislaus Iwelski, RWTH Aachen University, Germany; and Peter Vary, RWTH Aachen University, Germany
- 6 Cooperative Diversity Based on Distributed Interleavers and Its efficient Algorithm in Asynchronous Amplify-and-Forward Relay Networks**
Yier Yan, Chonbuk National University, Korea, Republic of; Balakannan S.P., Chonbuk National University, Korea, Republic of; Tae Chul Shina, Chonbuk National University, Korea, Republic of; Mi Sung Lee, Chonbuk National University, Korea, Republic of; and Moon Ho Lee, Chonbuk National University, Korea, Republic of
- 7 On the Error and Outage Performance of Coherent UWB Systems over Indoor Wireless Channels**
Chadi Abou-Rjeily, Lebanese American University, Lebanon; and Mario Bkassiny, Lebanese American University, Lebanon
- 8 Evaluation of a Reduced Complexity ML Decoding Algorithm for Tailbiting Codes on Wireless Systems**
Jorge Ortin, University of Zaragoza, Spain; Paloma Garcia, University of Zaragoza, Spain; Fernando Gutierrez, University of Zaragoza, Spain; and Antonio Valdovinos, University of Zaragoza, Spain
- 9 Transmit Preprocessing using Channel Selection for Multi-antenna Ultra-Wideband Communications**
Taotao Wang, Beijing University of Posts and Telecommunications, China; and Tiejun Lv, Beijing University of Posts and Telecommunications, China

10A Fast Automatic Gain Control Scheme for 3GPP LTE TDD System

Jun Hee Jang, Sungkyunkwan University, Korea, Republic of; and Hyung Jin Choi, Sungkyunkwan University, Korea, Republic of

11A Low-Complexity Semi-Analytical Approximation to the Block Error Rate in Nakagami-m Block Fading Channels

Arash T Toyserkani, Chalmers University of Technology, Sweden; Tilak Rajesh Lakshmana, Chalmers University of Technology, Sweden; Erik G.

Strom, Chalmers University of Technology, Sweden; and Arne Svensson, Chalmers University of Technology, Sweden

12A modified Belief Propagation algorithm based on Attenuation of the Extrinsic LLR

Liang Gong, Shanghai Jiao Tong University, China; Yin Xu, Shanghai Jiao Tong University, China; Bo Liu, Shanghai Jiao Tong University, China; Lin Gui, Shanghai Jiao Tong University, China; Bo Rong, Communications Research Centre, Canada; Yiyang Wu, Communications Research Centre, Canada; and Wenjun Zhang, Shanghai Jiao Tong University, China

Wednesday 8 September 2010

Wednesday 8 September 2010 11:00-12:30 Quebec

4A: Cooperative Communications and Protocols

Chair: Marc St-Hilaire, Carleton University, Canada

1 DTCoop: Delay Tolerant Cooperative Communications in DTN/WLAN Integrated Networks

Hao Liang, University of Waterloo, Canada; and Weihua Zhuang, University of Waterloo, Canada

2 Cooperative Multicast with Low-Cost Radios

Nikolaj Marchenko, University of Klagenfurt, Austria; and Christian Bettstetter, University of Klagenfurt, Austria

3 Low-Energy Selective Cooperative Diversity with ARQ for Wireless Image Sensor Networks

Marcelo Sousa, Federal University of Campina Grande, Brazil; Rafael Lopes, Federal University of Campina Grande, Brazil; Waslon Lopes, Federal University of Campina Grande, Brazil; and Marcelo Alencar, Federal University of Campina Grande, Brazil

4 Throughput and Spectral Efficiency in ARQ-based Cooperative Ad hoc Networks

Humphrey Rutagemwa, Communications Research Centre, Canada; Tricia Willink, Communications Research Centre, Canada; and Li Li, Communications Research Centre, Canada

5 Cross-Layer Multi-Hopping Scheme for Efficient and Reliable Transmission in Fading Environment

Yasushi Yamao, University of Electro-Communications, Japan; Yutaro Kida, University of Electro-Communications, Japan; and Yusuke Kadowaki, University of Electro-Communications, Japan

Wednesday 8 September 2010 11:00-12:30 Provinces I

4B: Power and Resource Allocation in Spectrum Sharing

Chair: Nandana Rajatheva, Asian Institute of Technology, Thailand

1 Joint Power and Rate Control for Spectrum Underlay in Cognitive Radio Networks with a Novel Pricing Scheme

Nandana Rajatheva, Asian Institute of Technology, Thailand; and Shashika Manosha, Asian Institute of Technology, Thailand

2 Distributed Power Control for Cognitive Radios with Primary Protection via Spectrum Sensing

Olasunkanmi Durowoju, University of Surrey, United Kingdom; Kamran Arshad, University of Surrey, United Kingdom; and Klaus Moessner, University of Surrey, United Kingdom

3 Uplink Resource Allocation in Cognitive Radio Networks with Imperfect Spectrum Sensing

Sami Almalfouh, Georgia Institute of Technology, United States; and Gordon Stüber, Georgia Institute of Technology, United States

4 Optimal Power Allocation for Relay Assisted Cognitive Radio Networks

Nandana Rajatheva, Asian Institute of Technology, Thailand; and Saliya Jayasinghe, Asian Institute of Technology, Thailand

5 Optimization of Time Slot and Transmit Power at Secondary Users for Dynamic Spectrum Access

Chen Sun, National Institute of Information Communications Technology (NICT), Japan; Yohannes D. Alemseged, National Institute of Information Communications Technology (NICT), Japan; Ha Nguyen Tran, National Institute of Information Communications Technology (NICT), Japan; and Hiroshi Harada, National Institute of Information and Communications Technology (NICT), Japan

Wednesday 8 September 2010 11:00-12:30 Provinces II

4C: Indoor Positioning

Chair: Xianbin Wang, University of Western Ontario, Canada

1 Use of artificial magnetic anomalies in indoor pedestrian navigation

Paul Kemppi, VTT Technical Research Centre of Finland, Finland; Terhi Rautiainen, Nokia Research Center, Finland; and Juuso Pajunen, VTT Technical Research Centre of Finland, Finland

2 A Novel First Arriving Path Detection Algorithm Using Multipath Interference Cancellation in Indoor Environments

Jiaxin Yang, The University of Western Ontario, Canada; Xianbin Wang, The University of Western Ontario, Canada; Sung Ik Park, Electronics Telecommunications Research Institute, Korea, Republic of; and Heung Mook Kim, Electronics and Telecommunications Research Institute, Korea, Republic of

3 An Area Layout-based MAP Estimation for Indoor Target Tracking

Daisuke Anzai, Osaka City University, Japan; and Shinsuke Hara, Osaka City University, Japan

4 Localization by Hybrid TOA, AOA and DSF Estimation in NLOS Environments

Yaqin Xie, Southeast University, China; Yan Wang, Southeast University, China; Bo Wu, Southeast University, China; Xi Yang, Southeast University, China; Pengcheng Zhu, Southeast University, China; and Xiaohu You, Southeast University, China

5 Propagation Modeling for Accurate Indoor WLAN RSS-based Localization

Kareem El-Kafrawy, Nile University, Egypt; Moustafa Youssef, Nile University, Egypt; Amr El-Keyi, Nile University, Egypt; and Ayman Naguib, Qualcomm, United States

Wednesday 8 September 2010 11:00-12:30 Governor General I

4D: MIMO Detection

Chair: Pavel Loskot, Swansea University, United Kingdom

1 Enhanced MIMO LMMSE Turbo Equalization

Jun Tao, University of Missouri-Columbia, United States; Jingxian Wu, University of Arkansas, United States; Yahong Zheng, Missouri University of Science and Technology, United States; and Chengshan Xiao, Missouri University of Science and Technology, United States

2 Integer-Forcing Linear Receivers: A New Low-Complexity MIMO Architecture

Jiening Zhan, University of California, Berkeley, United States; Bobak Nazer, University of Wisconsin, Madison, United States; Uri Erez, Tel Aviv University, Israel; and Michael Gastpar, University of California, Berkeley, United States

3 Simplified detection for MIMO systems using diversity maximizing incremental channel partition

Djelili Radji, McGill University, Canada; and Harry Leib, McGill University, Canada

4 Efficient Square-root and Division Free Algorithms for Inverse LDL' Factorization and the Wide-sense Givens Rotation with Application to V-BLAST

Hufei Zhu, Huawei Technology Co., Ltd., China; Wen Chen, Shanghai Jiaotong Univ., China; and Bin Li, Huawei Technology Co., Ltd., China

5 A General Joint Transceiver Design for Multiuser MIMO Channel Equalization

Baris Yuksekkaya, Hacettepe University, Turkey; and Cenk Tokcer, Hacettepe University, Turkey

Wednesday 8 September 2010 11:00-12:30 Governor General II

4E: OFDM II

Chair: Salama Ikki, University of Waterloo

1 Lattice Reduction-aided Uplink Multi-user MIMO in OFDM Cellular Systems

Masashi Itagaki, Tohoku University, Japan; Kazuki Takeda, Tohoku University, Japan; and Fumiyuki Adachi, Tohoku University, Japan

2 Low-Complexity Time domain PAPR Mitigation by Amplitude Modification for OFDM Systems

Lin yang, Research, China; Lin yang, Alcatel-Lucent Bell Labs, ResearchInnovation Center, Alcatel-Lucent Shanghai Bell Co., Ltd, China; Lu Zhang, Alcatel-Lucent Bell Labs, ResearchInnovation Center, Alcatel-Lucent Shanghai Bell Co., Ltd, China; and jin liu, Alcatel-Lucent Bell Labs, Research and Innovation Center, Alcatel-Lucent Shanghai Bell Co., Ltd, China

3 On the Diversity Enhancement and Power Balancing of Per-Subcarrier Antenna Selection in OFDM Systems

Ki-Hong Park, Korea University, Korea, Republic of; Young-Chai Ko, Korea University, Korea, Republic of; and Mohamed-Slim Alouini, KAUST, Saudi Arabia

4 Resource Allocation and Design of Variable Length Per-tone Equalizers in MIMO-OFDM Systems

Jian Wang, Institute of Information and Communication Engineering, Zhejiang University, China; Aiping Huang, Institute of Information and Communication Engineering, Zhejiang University. Zhejiang Provincial Key Laboratory of Information Network Technology, China; Jing Song, Zhejiang Ningbo Electric Power Bureau, China; and Long Qin, Wireless Advanced Receiver Research, Huawei Technologies, China

5 Subcarrier Weighting Scheme in OFDM Receiver with $\Sigma \Delta A/D$ Converter on Multipath Fading Channels

Ayana Suzuki, Keio University, Japan; Mamiko Inamori, Keio University, Japan; and Yukitoshi Sanada, Keio University, Japan

Wednesday 8 September 2010 11:00-12:30 Governor General III

4F: Coding and Modulation

Chair: Sunil Maharaj, University of Pretoria

1 An Offset Modulation scheme to control the PAPR of an OFDM transmission

Kahesh Dhuness, University of Pretoria, South Africa; and Bodhaswar Tikanath Jugpershad Maharaj, University of Pretoria, South Africa

2 Improving the Speech Quality with OSC: DoubleFull-rate Performance Assessment

Rafael Paiva, Nokia Technology Institute, Brazil; Robson Vieira, Nokia Technology Institute, Brazil; Rauli Jarvela, Nokia Siemens Networks,

Finland; Renato Iida, Nokia Technology Institute, Brazil; Fernando Tavares, Nokia Technology Institute, Brazil; and Mikko Saily, Nokia Siemens Networks, Finland

3 Investigation of Two-Dimensional Orthogonal Sequence Mapping to Multi-layer Reference Signal for LTE-Advanced Downlink

Kazuaki Takeda, NTT DOCOMO, INC., Japan; Yoshihisa Kishiyama, NTT DOCOMO, INC., Japan; Motohiro Tanno, NTT DOCOMO, INC., Japan; and Takehiro Nakamura, NTT DOCOMO, INC., Japan

4 Joint Network and Channel Decoding for HARQ in Wireless Broadcasting System

Yuan Zhao, Beijing University of Posts and Telecommunications, China; Xiaoxiang Wang, Beijing University of Posts and Telecommunications, China; and Song Li, Beijing University of Posts and Telecommunications, China

5 Improvement of Multicast Service Transmission by Using Unicast Channels in Cellular Networks

Seung Joon Lee, Kangwon National University, Korea, Republic of; Yongjoo Tcha, Korea Telecom, Korea, Republic of; Jin Su Jung, Korea Telecom, Korea, Republic of; and Seong-Choon Lee, Korea Telecom, Korea, Republic of

Wednesday 8 September 2010 11:00-12:30 Nunavut

4G: Wireless LAN

Chair: Yu Cheng, Illinois Institute of Technology

1 Real-Time Detection of Selfish Behavior in IEEE 802.11 Wireless Networks

Jin Tang, Illinois Institute of Technology, United States; Yu Cheng, Illinois Institute of Technology, United States; Yong Hao, Illinois Institute of Technology, United States; and Chi Zhou, Illinois Institute of Technology, United States

2 Distributed Resource Reservation Mechanism for IEEE 802.11e-Based Networks

Xiaobo Yu, University of Surrey, United Kingdom; Pirabakaran Navaratnam, University of Surrey, United Kingdom; and Klaus Moessner, University of Surrey, United Kingdom

3 Comparing backhauling solutions in WiFi networks

Salah Eddine Elayoubi, Orange Labs, France; and Max Francisco, Orange Labs, France

4 Machine-to-Machine communication in LTE-A

Yu Chen, Alcatel-Lucent Shanghai Bell, China; and Wei Wang, Alcatel-Lucent Shanghai Bell, China

5 Penalty Function Method for Peer Selection over Wireless Mesh Network

Mohammad Zulhasnine, Carleton University, Canada; Changcheng Huang, SystemsComputer Engineering, Canada; and Anand Srinivasan, EION Inc., Canada

Wednesday 8 September 2010 11:00-12:30 Nova Scotia

4H: Handover in Wireless Networks II

Chair: Minghui Shi, Communication Research Center, Canada

1 Model for Call Acceptance Based on Handoff Guarantees for Two Classes of Users

Md. Mostafizur Rahman, University of Manitoba, Canada; and Attahiru Alfa, University of Manitoba, Canada

2 Optimal Handover Decision Algorithm for Throughput Enhancement in Cooperative Cellular Networks

Hyun-Ho Choi, Samsung Advanced Institute of Technology, Korea, Republic of; Jong Bu Lim, Samsung Advanced Institute of Technology, Korea, Republic of; Hyosun Hwang, Samsung Advanced Institute of Technology, Korea, Republic of; and Kyunghun Jang, Samsung Advanced Institute of Technology, Korea, Republic of

3 Pseudo Handoff Call Elimination Capable Call Admission Control Scheme for Soft Handoff in CDMA Networks

S H Shah Newaz, Korea Advanced Institute of Science and Technology, Korea, Republic of; Jongmin Lee, Korea Advanced Institute of Science and Technology, Korea, Republic of; Youngin Bae, Korea Advanced Institute of Science and Technology, Korea, Republic of; Bikash Nakarmi, Korea Advanced Institute of Science and Technology, Korea, Republic of; and JunKyun Choi, Korea Advanced Institute of Science and Technology, Korea, Republic of

4 Repeaters and Remote Radioheads in EVDO Networks

Arnab Chakrabarti, Qualcomm, United States; Chris Lott, CR&D, United States; Donna Ghosh, Qualcomm, United States; and Rashid Attar, Qualcomm, United States

5 Trigger Node Assisted WLAN to Cellular Vertical Handover

Hani Nemati, Iran University of Science Technology, Iran, Islamic Republic of; Seyed Vahid Azhari, Iran University of Science Technology, Iran, Islamic Republic of; Mohammed Smadi, McMaster University, Canada; and Terence Todd, McMaster University, Canada

Wednesday 8 September 2010 11:00-12:30 Alberta

4I: Relay in Wireless Networks

Chair: Xiugang Wu, University of Waterloo

1 HARQ Aided Systematic LT Coding for Amplify-Forward and Decode-Forward Cooperation

Hoang Anh Ngo, University of Southampton, United Kingdom; Thanh Dang Nguyen, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

2 An Optimality-Robustness Tradeoff in the Compress-and-Forward Relay Scheme

Xiugang Wu, University of Waterloo, Canada; Guangzhe Fan, University of Waterloo, Canada; and Liang-Liang Xie, University of Waterloo, Canada

3 On the Outage of Multihop Parallel Relay Networks

Bappi Barua, University of Wollongong, Australia; Farzad Safaei, University of Wollongong, Australia; and Mehran Abolhasan, University of Technology Sydney, Australia

4 Low-density Parity-check Codes for Two-way Relay Channels

Xin Sheng Zhou, University of Waterloo, Canada; Liang-Liang Xie, University of Waterloo, Canada; and Xuemin (Sherman) Shen, University of Waterloo, Canada

5 A Multi-mode Multi-band and Multi-system-based Access Architecture for High-speed Railways

Jia-Yi Zhang, State Key Laboratory of Rail Traffic Control and Safety, Beijing Jiaotong University, China; Zhen-Hui Tan, State Key Laboratory of Rail Traffic Control and Safety, Beijing Jiaotong University, China; Zhang-Dui Zhong, State Key Laboratory of Rail Traffic Control and Safety, Beijing Jiaotong University, China; and Yong Kong, State Key Laboratory of Rail Traffic Control and Safety, Beijing Jiaotong University, China

Wednesday 8 September 2010 11:00-12:30 Confederation

4P: Transmission Technologies Posters II

1 Cooperative Beamforming with Multiple BaseStation Assignment Based on Correlation Knowledge

Guido Dartmann, RWTH Aachen University, Germany; Xitao Gong, RWTH Aachen University, Germany; and Gerd Ascheid, RWTH Aachen University, Germany

Wednesday 8 September 2010 14:00-15:30 Quebec

5A: Performance Analysis

Chair: Yaser P. Fallah, University of California Berkely

1 On Performance Evaluation of Reliable Topology Control Algorithms in Mobile Ad Hoc Networks

Thuan Ngo, Tohoku University, Japan; Hiroki Nishiyama, Tohoku University, Japan; Nirwan Ansari, New Jersey Institute of Technology, United States; and Nei Kato, Tohoku University, Japan

2 Robust DVB-T/H Receiver in Fast Fading Channels

Liang Zhang, Communications Research Centre Canada, Canada; Zhihong Hong, Communications Research Centre Canada, Canada; and Louis Thibault, Communications Research Centre Canada, Canada

3 Subcarrier Suppressed Transmission Scheme for Satellite/Terrestrial Integrated Mobile Communication System

Jun Mashino, NTT, Japan; Yushi Shirato, NTT, Japan; and Takatoshi Sugiyama, NTT, Japan

4 Data Transmission in the Presence of Channel State Feedback and Outage Probability Constraint

Behrooz Makki, Chalmers University of Technology, Sweden; and Thomas Eriksson, Chalmers University of Technology, Sweden

5 Effect of the aeronautical L-DACS2 radio-frequency signals on the DME system performance

Najett Neji, Supélec, France; Raul De Lacerda, Supélec, France; Alain Azoulay, Supélec, France; Thierry Letertre, Supélec, France; and Olivier Outtier, DGAC, France

6 Factors Affecting Spectral Regrowth in DS-CDMA Signals due to PD-HPA Nonlinear Distortion

Tarek Helaly, Carleton University, Canada; Richard Dansereau, Carleton University, Canada; and Mohamed El-Tanany, Carleton University, Canada

7 Frequency offset estimation with increased Nyquist frequency

Niklas Andgart, Ericsson AB, Sweden; and Fredrik Nordström, Ericsson AB, Sweden

8 Joint Signal Processing in Femtocell Based Distributed Antenna Systems in High Buildings

Temitepe Alade, University Of kent, United Kingdom; and Huiling Zhu, University Of kent, United Kingdom

9 Near Optimal Viterbi Decoders for Convolutional Codes in Symmetric Alpha-Stable Noise

Tarik Shehata, Carleton University, Canada; Ian Marsland, Carleton University, Canada; and Mohamed El-Tanany, Carleton University, Canada

10 On Complexity-Reduced Implementation of Multi-Dimensional Wiener Interpolation Filtering

Huijun Li, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut, Germany; and Andreas Ibing, TU Berlin, Germany

11 On Spectrum Broadening of Pre-coded Faster-than-Nyquist Signaling

Yong Jin Daniel Kim, McGill University, Canada; and Jan Bajcsy, McGill University, Canada

12 Performance evaluation of an L-band broadcast DAB/DMB system in simulated subway tunnel environment

Abdelmoumen Mouaki Benani, Communications Research Centre, CRC, Canada; and Martin Quenneville, Communications Research Centre, CRC, Canada

2 Enhanced Busy-Tone-Assisted MAC Protocol for Wireless Ad Hoc Networks

Ahmad Abdullah, University of Victoria, Canada; Lin Cai, University of Victoria, Canada; and Fayez Gebali, University of Victoria, Canada

3 Measuring the Impact of ACI in Cognitive Multi-Radio Mesh Networks

Marcel C. Castro, Karlstad University, Sweden; Andreas Kassler, Karlstad University, Sweden; and Stefano Avallone, University of Naples Federico II, Italy

4 Mean number of transmissions with CSMA in a linear network

Philippe Jacquet, INRIA., France; and Paul Muhlethaler, INRIA, France

5 Research on the Traffic Load Issue of WANETs

Chao Dong, Department of Computer Science and Technology, Nanjing University, Nanjing, Nanjing Institute of Communication Engineering, Nanjing, China; Hai Wang, Nanjing Institute of Communication Engineering, Nanjing, China; Xiaoming Tang, Nanjing Institute of Communication Engineering, Nanjing, China; Panlong Yang, Nanjing Institute of Communication Engineering, Nanjing, China; and Guihai Chen, Department of Computer Science and Technology, Nanjing University, Nanjing, China

Wednesday 8 September 2010 14:00-15:30 Provinces I

5B: Novel Cognitive Radio / Dynamic Spectrum Access Paradigms I

Chair: Alireza Attar, The University of British Columbia, Canada

1 Time-Optimized and Truthful Dynamic Spectrum Rental Mechanism

Shabnam Sodagari, Pennsylvania State University, United States; Alireza Attar, University of British Columbia, Canada; Victor C. M. Leung, University of British Columbia, Canada; and Sven G. Bilén, Pennsylvania State University, United States

2 A Competitive and Dynamic Pricing Model for Secondary Users in Infrastructure based Networks

Soumitra Dixit, Carleton University, Canada; Shalini Periyalwar, Carleton University, Canada; and Halim Yanikomeroglu, Carleton University, Canada

3 Supporting Random Real-Time Traffic in a Cognitive Radio Sensor Network

Zhongliang Liang, McMaster University, Canada; Shan Feng, McMaster University, Canada; and Dongmei Zhao, McMaster University, Canada

4 A Joint Relay Selection, Spectrum Allocation and Rate Control Scheme in Relay-Assisted Cognitive Radio System

Chun He, Wireless Technology Innovation Institutes, China; Zhiyong Feng, Wireless Technology Innovation Institutes, China; Qixun Zhang, Wireless Technology Innovation Institutes, China; Zhongqi Zhang, Wireless Technology Innovation Institutes, China; and Han Xiao, Wireless Technology Innovation Institutes, China

5 New Optimized Solution Method for Beamforming in Cognitive Multicast Transmission

Anh Phan, University of New South Wales, Australia; H. D. Tuan, University of New South Wales, Australia; and Ha Hoang Kha, University of New South Wales, Australia

Wednesday 8 September 2010 14:00-15:30 Provinces II

5C: Relaying I

Chair: Fernando Velez, University of Beira Interior, Portugal

1 Amplify-and-Forward Multi-Antenna Beamforming with Joint Source-Relay Power Constraint

Yang-wen Liang, University of British Columbia, Canada; and Robert Schober, University of British Columbia, Canada

2 Maximizing the Spectral Efficiency of Amplify-and-Forward Relaying Systems over Nakagami-m Fading

Jae-Woo Kwon, Korea University, Korea, Republic of; Kyu-Sung Hwang, Korea University, Korea, Republic of; Young-Chai Ko, Korea University, Korea, Republic of; and Hong-Chuan Yang, University of Victoria, Canada

3 Performance Analysis and Optimum Power Allocation for Packet Decode-and-Forward Cooperative Relaying System

Yong Xi, School of Electronic Science and Engineering, National University of Defense Technology, China; Shaoyang Liu, School of Electronic Science and Engineering, National University of Defense Technology, China; Alister Burr, University of York, United Kingdom; David Grace, University of York, United Kingdom; and Shengchun Huang, School of Electronic Science and Engineering, National University of Defense Technology, United Kingdom

4 On the Capacity of Relay-Selection Cooperative-Diversity Networks Under Adaptive Transmission

Salama Ikki, University of Waterloo, Canada; and Mohamed Ahmed, Memorial University of Newfoundland, Canada

5 On the performance of Two-Hop Amplify and Forward Relay Networks with Beamforming over Rayleigh-Rician Fading Channels

Shaohua Chen, Beijing University of Post-Telecommunications, China; Fang Liu, North China Electric Power University, China; Xin Zhang, Beijing University of Post-Telecoms, China; Yunan Han, Beijing University of Post-Telecoms, China; and Dacheng Yang, Beijing University of Post-Telecoms, China

Wednesday 8 September 2010 14:00-15:30 Governor General I

5D: MIMO Precoding

Chair: Pawel Dmochowski, Victoria University of Wellington, New Zealand

1 Mean Mutual Information Per Coded Bit based Precoding in MIMO-OFDM Systems

Taiwen Tang, University of Toronto, Canada; Roya Doostnejad, Redline Communications Inc., Canada; and Teng Joon Lim, University of Toronto, Canada

2 A Codebook-based Precoding Method for MIMO Amplify-and-Forward Relaying System

Yuan Luo, Wireless Technology Innovation Labs, Beijing University of Posts and Telecommunications, China; Lihua Li, Wireless Technology Innovation Labs, Beijing University of Posts and Telecommunications, China; Qiang Wang, Wireless Technology Innovation Labs, Beijing University of Posts and Telecommunications, China; and Zhixin Liu, Department of Information Engineering, The Chinese University of Hong Kong, Shatin, Hong Kong, China

3 On Single-User Collaborative Random Beamforming

Jia-Hao Wu, Industrial Technology Research Institute, Taiwan; Ping-Heng Kuo, Industrial Technology Research Institute, Taiwan; Rong-Terng Juang, Industrial Technology Research Institute, Taiwan; and Pang-An Ting, Industrial Technology Research Institute, Taiwan

4 Robust Codebook Design Based on Unitary Rotation of Grassmannian Codebook

Jianfeng Kang, Nokia Siemens Networks, China; Shaohua Li, Nokia Siemens Networks, China; and Haiyan Jia, Beijing Jiaotong University, China

5 Reducing Signalling Overhead by an Enhanced Differential Codebook in Multimode MIMO-OFDM Systems

Wei Wang, DOCOMO Beijing Communications Laboratories Co., Ltd., China; Zhan Zhang, DOCOMO Beijing Communications Laboratories Co., Ltd., China; and Hidetoshi Kayama, DOCOMO Beijing Communications Laboratories Co., Ltd., China

Wednesday 8 September 2010 14:00-15:30 Governor General II

5E: Modulation II

Chair: Shahram Yousefi

1 On the Accuracy of the Gaussian Approximation for the Evaluation of Nonlinear Effects in OFDM Signals

Teresa Araújo, Instituto de Telecomunicações & LEMA-ISEP, Portugal; and Rui Dinis, Instituto de Telecomunicações & FCT-UNL, Portugal

2 On the Design of Linear Receivers for SC-FDE Schemes Employing OQPSK Modulation

Miguel Luzio, Instituto de Telecomunicações, UNINOVA, Portugal; Rui Dinis, Instituto de Telecomunicações, FCT - Universidade Nova de Lisboa, Portugal; and Paulo Montezuma, UNINOVA, FCT - Universidade Nova de Lisboa, Portugal

3 Performance of GMSK and QPSK Signals With Diversity Reception in Arbitrarily Correlated and Unbalanced Weibull fading channels

Ibrahim Ghareeb, Jordan University of Science & Technology, Jordan; and Ahmad Abu Al Haija, Jordan University of Science & Technology, Jordan

4 Receiver Multiuser Diversity Aided Multi-Stage MMSE Multiuser Detection for DS-CDMA and SDMA Systems Employing I-Q Modulation

Lie-Liang Yang, University of Southampton, United Kingdom

5 Unit density axially localized pulse (UDALOP) for multi-carrier communication systems

Tolga Kurt, PlusOneMinusOne, Turkey; Gunes Karabulut Kurt, Istanbul Technical University, Turkey; and Abbas Yongacoglu, University of Ottawa, Canada

Wednesday 8 September 2010 14:00-15:30 Governor General III

5F: Iterative Processing

Chair: Gerhard Bauch,

1 Frequency-domain Iterative MUI Cancellation for Uplink SC-FDMA Using Frequency-domain Filtering

Suguru Okuyama, Tohoku University, Japan; Kazuki Takeda, Tohoku University, Japan; and Fumiyuki Adachi, Tohoku University, Japan

2 Harmony Search Aided Iterative Channel Estimation, Multiuser Detection and Channel Decoding for DS-CDMA

Rong Zhang, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

3 Design of Fixed-Point Processing Based Turbo Codes Using Extrinsic Information Transfer Charts

Liang Li, University of Southampton, United Kingdom; Robert G. Maunder, University of Southampton, United Kingdom; Bashir M. Al-Hashimi, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

4 Semi-blind Iterative Joint Estimation of Frequency Selective I/Q-Imbalance and Modulator Offset Error in Direct-Conversion Transmitters

Jian Luo, Fraunhofer Heinrich Hertz Institute, Germany; Andreas Kortke, Fraunhofer Heinrich Hertz Institute, Germany; and Wilhelm Keusgen, Fraunhofer Heinrich Hertz Institute, Germany

5 Turbo Source Compression with Jointly Optimized Inner Irregular and Outer Irregular Codes

Laurent Schmalen, RWTH Aachen University, Germany; Peter Vary, RWTH Aachen University, Germany; Thorsten Clevorn, Infineon Technologies, Germany; and Marc Adrat, Fraunhofer Gesellschaft, Germany

Wednesday 8 September 2010 14:00-15:30 Nunavut

5G: Transmission Technologies

Chair: Jiming Chen, Zhejiang University, China

1 Two-step Moving Target Detection Algorithm for Automotive 77 GHz FMCW Radar

Eugin Hyun, DGIST, Korea, Republic of; Woojin Oh, Kumoh National Institute of Technology, Korea, Republic of; and Jong-Hun Lee, DGIST, Korea, Republic of

2 A Novel Range Detection Method for 60GHz LFM CW Radar

Yizhong Wu, Zhejiang University, China; Ying Bao, Zhejiang University, China; Zhiguo Shi, Zhejiang University, China; Jiming Chen, Zhejiang University, China; and Youxian Sun, Zhejiang University, China

3 Schedulability Analysis and Message Schedule Computation for the Dynamic Segment of FlexRay

Klaus Schmidt, Cankaya University, Turkey; and Ece G. Schmidt, Middle East Technical University, Turkey

4 Vehicle-Driver Communication using Off-The-Shelf Transceivers

Mohammad Ghamari, Lancaster University, United Kingdom; Antony Chung, Lancaster University, United Kingdom; Utz Roedig, Lancaster University, United Kingdom; Bahram Honary, Lancaster University, United Kingdom; and Carl A. Pickering, Jaguar Cars Limited, United Kingdom

5 Millimeter-wave CMOS Antennas and RFIC Parameter Extraction for Vehicular Applications

Felix Gutierrez, The University of Texas at Austin, United States; Ted Rappaport, The University of Texas at Austin, United States; and James Murdock, The University of Texas at Austin, United States

Wednesday 8 September 2010 14:00-15:30 Nova Scotia

5H: Resource Allocation

Chair: Patrick Hosein, Huawei Technologies

1 Large System Resource Allocation in Multicell OFDMA Communication Systems: A Variational Analysis Approach

Husheng Li, The University of Tennessee, United States

2 Coordinated Resource Allocation for Downlink Transmissions: The Intra-Site Case

Patrick Hosein, Huawei, United States

3 An Efficient Resource Allocation in OFDMA Femtocells Networks

Taeyoung Lee, Sungkyunkwan University, Korea, Republic of; Hyuntae Kim, Sungkyunkwan University, Korea, Republic of; Jinhyun Park, Sungkyunkwan University, Korea, Republic of; and Jitae Shin, Sungkyunkwan University, Korea, Republic of

4 Downlink Coordinated Beamswitching for VoIP Traffic

Patrick Hosein, Huawei, United States; Li Yong, Huawei, China; Kome Oteri, Huawei, United States; and He Yuan, Huawei, China

5 Inter-Site Joint Detection with Reduced Backhaul Capacity Requirements for the 3GPP LTE Uplink

Philipp Frank, Deutsche Telekom Laboratories, Germany; Andreas Müller, University of Stuttgart, Germany; and Joachim Speidel, University of Stuttgart, Germany

Wednesday 8 September 2010 14:00-15:30 Alberta

5I: LTE Wireless Networks

Chair: Thomas Kürmer, Braunschweig Technical University

1 On Pre-emption and Congestion Control for LTE Systems

Raymond Kwan, NEC Telecom MODUS Ltd, United Kingdom; Rob Arnott, NEC Telecom MODUS Ltd, United Kingdom; Riccardo Trivisonno, NEC Telecom MODUS Ltd, United Kingdom; and Mitsuhiro Kubota, NEC Corporation, Japan

2 Co-existence Analysis of LTE Micro Cell and LTE Out-band Backhaul

XingLin Wang, Nokia Siemens Networks Technology, China; Xiaokun Yang, Nokia Siemens Networks Technology, China; and Zheng Li, Nokia Siemens Networks Technology, United States

3 Performance Evaluation of Downlink Interference Coordination Techniques in LTE Networks

David González González, Universitat Politècnica de Catalunya, Spain; Mario García-Lozano, Universitat Politècnica de Catalunya, Spain; Silvia Ruiz, Universitat Politècnica de Catalunya, Spain; Joan Olmos, Universitat Politècnica de Catalunya, Spain; and Virginia Corvino, University of Bologna, Italy

4 Handover parameter optimization in LTE self-organizing networks

Thomas Jansen, Technische Universität Braunschweig, Germany; Irina Balan, Interdisciplinary Institute for Broadband Technology, Belgium; John

Turk, Vodafone Group, United Kingdom; Ingrid Moerman, Interdisciplinary Institute for Broadband Technology, Belgium; and Thomas Kürner, Technische Universität Braunschweig, Germany

5 A simulation study of LTE intra-frequency handover performance

Peter Legg, Huawei Technologies Sweden AB, Sweden; Gao Hui, Huawei Technologies Sweden AB, Sweden; and Johan Johansson, Huawei Technologies Sweden AB, Sweden

Wednesday 8 September 2010 14:00-15:30 Confederation

5P: Wireless Access Posters

1 A Novel Guaranteed Handover Scheme for HAP Communications Systems with Adaptive Modulation and Coding

Shufeng Li, National University of Defense Technology, China; David Grace, University of York, United Kingdom; Jibo Wei, National University of Defense Technology, China; and Dongtang Ma, National University of Defense Technology, China

2 Two-Dimension Adaptive Spectral Efficiency for SC-FDMA Systems

Ye Wu, NEC labs, China, China; Ming Lei, NEC labs, China, China; and Jun Du, NEC labs, China, China

3 User Experience Analysis of Smartphone Web Surfing in UMTS Networks

Ki-Ho Lee, KT, Korea, Republic of; Jong-Ho Park, KT, Korea, Republic of; and Jong-Seog Koh, KT, Korea, Republic of

4 Wireless Schedulers with Future Sight via Real-Time 3D Environment Mapping

Matthew Webb, University of Bristol, United Kingdom; Congzheng Han, University of Bristol, United Kingdom; Angela Doufexi, University of Bristol, United Kingdom; and Mark Beach, University of Bristol, United Kingdom

5 A Novel Downlink Resource Scheduling Scheme for Relay Enhanced Cellular Network

Dongyao Wang, Alcatel-Lucent Shanghai Bell, China; Jiyong Pang, Alcatel-Lucent Shanghai Bell, China; Jianguo Liu, Alcatel-Lucent Shanghai Bell, China; Gang Shen, Alcatel-Lucent Shanghai Bell, China; Qi Jiang, Alcatel-Lucent Shanghai Bell, China; and Wei Wang, Alcatel-Lucent Shanghai Bell, China

6 Adaptive Power Level Setting of Femtocell Base Stations for Mitigating Interference with Macrocells

Motoki Morita, NEC Corporation, Japan; Yasuhiko Matsunaga, NEC Corporation, Japan; and Kojiro Hamabe, NEC Corporation, Japan

7 An Enhanced VoIP Scheduling with Silence Suppression in IEEE 802.16e/m Systems

Li-Chun Wang, National Chiao Tung University, Taiwan; Eulin Yen, National Chiao Tung University, Taiwan; and Jane-Hwa Huang, National Chi Nan University, Taiwan

8 Call Admission Control Scheme for Multicast Service Enabled Cellular Networks

Yi Huang, Institute of Computing Technology, Chinese Academy of Sciences, China; Manli Qian, Institute of Computing Technology, Chinese Academy of Sciences, China; Yao Yuan, Institute of Computing Technology, Chinese Academy of Sciences, China; Jinglin Shi, Institute of Computing Technology, Chinese Academy of Sciences, China; Lin Tian, Institute of Computing Technology, Chinese Academy of Sciences, China; and Xiaojing Huang, Commonwealth Scientific and Industrial Research Organisation, Australia

9 CSI Reference Signal Designs for Enabling Closed-Loop MIMO Feedback

Timothy Thomas, Motorola, United States; Bishwarup Mondal, Motorola, United States; and Amitava Ghosh, Motorola, United States

10 Partial Frequency Allocation in Downlink OFDMA based on Evolutionary Algorithms

Georgios Koudouridis, Huawei Technologies Sweden R&D Center, Sweden; Christer Qvarfordt, Huawei Technologies Sweden R&D Center, Sweden; Tao Cai, Huawei Technologies Sweden R&D Center, Sweden; and Johan Johansson, Huawei Technologies Sweden R&D Center, Sweden

11 Performance of a Reuse Partitioning Based Cellular System in a Multicell Environment

Seung Yeon Kim, Univ, Korea, Republic of; Hyong Woo Lee, Univ, Korea, Republic of; Se Jin Kim, Univ, Korea, Republic of; Seungwan Ryu, Univ, Korea, Republic of; Choong Ho Cho, Univ, Korea, Republic of; and Nam-Hoon Park, ETRI, Korea, Republic of

12 Performance Evaluation of DVB-T2 Time Interleaving in Mobile Environments

David Gozalvez, Universidad Politécnica de Valencia, Spain; David Vargas, Universidad Politécnica de Valencia, Spain; David Gomez-Barquero, Universidad Politécnica de Valencia, Spain; and Narcis Cardona, Universidad Politécnica de Valencia, Spain

Wednesday 8 September 2010 16:00-17:30 Quebec

6A: Cooperative Communications II

Chair: Lie-Liang Yang, University of Southampton, UK

1 Distributed Three-Stage Concatenated Irregular Convolutional, Unity-Rate and Space-Time Trellis Coding for Single-Antenna Aided Cooperative Communications.

Hung Viet Nguyen, the University of Southampton, United Kingdom; Soon Xin Ng, the University of Southampton, United Kingdom; and Lajos Hanzo, the University of Southampton, United Kingdom

2 Spectrally Efficient Cooperative Scheme with Implicit Feedback assisted Transmission

Ashish James, Nanyang Technological University, Singapore; A. S. Madhukumar, Nanyang Technological University, Singapore; Ernest Kurniawan, A*STAR, Singapore; and Tio Surya Dharma, Nanyang Technological University, Singapore

3 Field Experimental Results of Multi-hop Cooperative Communications using STBC Technique

Akihiro Kuwabara, Kyoto University, Japan; Yuji Oishi, Kyoto University, Japan; Hidekazu Murata, Kyoto University, Japan; Koji Yamamoto, Kyoto University, Japan; and Susumu Yoshida, Kyoto University, Japan

4 A Novel Bargaining Based Relay Selection and Power Allocation Scheme for Distributed Cooperative Communication Networks

Bing Xie, Beijing University of Posts and Telecommunications, China; Wen'an Zhou, Beijing University of Posts and Telecommunications, China; Chenxi Hao, Beijing University of Posts and Telecommunications, China; Xiaoli Ai, Beijing University of Posts and Telecommunications, China; and Junde Song, Beijing University of Posts and Telecommunications, China

5 Distributed Source-coding, Channel-coding and Modulation for Cooperative Communications

Soon Xin Ng, University of Southampton, United Kingdom; Kai Zhu, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

Wednesday 8 September 2010 16:00-17:30 Provinces I

6B: Mobile Application Technologies

Chair: Alejandro Quintero, Ecole Polytechnique de Montreal, Canada

1 Dynamic Itinerary Planning for Mobile Agents with a Content-Specific Approach in Wireless Sensor Networks

Kaoru Ota, The University of Aizu, Japan; Mianxiong Dong, The University of Aizu, Japan; Junbo Wang, The University of Aizu, Japan; Song Guo, The

University of Aizu, Japan; Zixue Cheng, The University of Aizu, Japan; and Minyi Guo, Shanghai Jiao Tong University, China

- 2 An Enhancement of mSCTP Handover with an Adaptive Primary Path Switching Scheme**
Minho Jo, Korea University, Korea, Republic of; Jinsuk Baek, Winton-Salem State University, United States; and Paul Fisher, Winton-Salem State University, United States
- 3 An Overlay Gateway for the Integration of IP Multimedia Subsystem and Mobile Sink Based - Wireless Sensor Networks**
Marcela Velez Pulgarin, Ecole Polytechnique de Montreal, Canada; Roch Glitho, Concordia Institute of Information Systems Engineering (CIISE), Canada; and Alejandro Quintero, Ecole Polytechnique de Montreal, Canada
- 4 Switching Between Hybrid MIMO Structures for Video Transmission Based on Distortion Model**
Martin B. Obando, Federal University of Cear, Brazil; Walter C. Freitas Jr, Wireless Telecommunications Research Group (GTTEL), Brazil; and Francisco R. P. Cavalcanti, Wireless Telecommunications Research Group (GTTEL), Brazil
- 5 Characteristics of the Threshold-based IR-UWB Positioning System**
Jimyung Kang, Korea Electrotechnology Research Institute, Korea, Republic of; Moon-kyoung Kang, Korea Electrotechnology Research Institute, Korea, Republic of; Soonwoo Lee, Korea Electrotechnology Research Institute, Korea, Republic of; Young-jin Park, Korea Electrotechnology Research Institute, Korea, Republic of; and Kwanho Kim, Korea Electrotechnology Research Institute, Korea, Republic of

Wednesday 8 September 2010 16:00-17:30 Provinces II

6C: Locationing & Tracking I

Chair: Andrea Tonello, University of Udine, Italy

- 1 A Fuzzy Logic Approach to Angle of Arrival Averaging**
Sichun Wang, DRDC Ottawa, Canada; and Robert Inkol, DRDC Ottawa, Canada
- 2 DoA Estimation with Compensation of Hardware Impairments**
Daniele Inserra, DIEGM - Universit di Udine, Italy; and Andrea M. Tonello, DIEGM - Universit di Udine, Italy
- 3 Augmenting Kalman Filtering with Parallel Cascade Identification for Improved 2D Land Vehicle Navigation**
Umar Iqbal, Queens University, Canada; Jacques Georgy, Queens University, Canada; Michael J. Korenberg, Queen's University, Canada; and Abouelmagd Noureldin, Royal Military College of Canada / Queen's University, Canada
- 4 Peer to Peer Equation Augmentation for an Altitude Aided GNSS Receiver**
Marco Rao, Universit di Palermo, Italy; Letizia Lo Presti, Politecnico di Torino, Italy; and Jaron Samson, European Space Agency, Netherlands
- 5 Nonparametric Belief Propagation based on Spanning Trees for Cooperative Localization in Wireless Sensor Networks**
Vladimir Savic, Polytechnic University of Madrid, Spain; and Santiago Zazo, Polytechnic University of Madrid, Spain

Wednesday 8 September 2010 16:00-17:30 Governor General I

6D: MIMO Systems

Chair: Ngoc-Dung Dao, Toshiba Research Europe Ltd., United Kingdom

- 1 Analysis of Channel Capacity for LTE Downlink Multiuser MIMO Systems**
Pei Xiao, Queen's University Belfast, United Kingdom; Zihuai Lin, University of Sydney, Australia; and Colin Cowan, Queen's University Belfast, United Kingdom

2 Channel Norm-Based Power Control in Downlink Multi-User Distributed MIMO Systems

Yonghui Oh, Sogang University, Korea, Republic of; Jonghyun Park, Sogang University, Korea, Republic of; and Wonjin Sung, Sogang University, Korea, Republic of

3 Impact of MIMO pilot sequence length and frame length at different frequencies

Geoffrey W.K. Colman, Communications Research Centre, Canada; and Tricia J. Willink, Communications Research Centre, Canada

4 Joint interleaving with transmit diversity for Nx SC-FDMA MIMO system

yan meng, Research and Innovation Center Alcatel-Lucent Shanghai Bell, Co., Ltd, China; and Lu Zhang, Research and Innovation Center Alcatel-Lucent Shanghai Bell, Co., Ltd, China

5 Single-carrier Frequency Domain Adaptive Antenna Array for Cellular Systems

Wei Peng, Tohoku University, Japan; and Fumiyuki Adachi, Tohoku University, Japan

Wednesday 8 September 2010 16:00-17:30 Governor General II

6E: Relay Networks

Chair: Ha H. Nguyen, University of Saskatchewan, Canada

1 Outage Probability Analysis of Multi-Relay Delay-Limited Hybrid-ARQ Channels

Behrouz Maham, University of Oslo, Norway; Are Hjørungnes, University of Oslo, Norway; and Mrouane Debbah, Supelec, France

2 A Novel Partial Decode-and-Forward Relaying with Multiple Antennas

Jong Yeol Ryu, KAIST, Korea, Republic of; Wan Choi, KAIST, Korea, Republic of; and Dong In Kim, Sungkyunkwan University, Korea, Republic of

3 Delay-Tolerant Cooperative Diversity Routing MANET

Tian Peng Ren, National University of Defense Technology, China; Yong Liang Guan, Nanyang Technological University, Singapore; Chau Yuen, Institute for Information Research, Singapore; and Rong Jun Shen, General Equipment Department of PLA, China

4 The Realization of Full Duplex Relay and Sum Rate Analysis in Multiuser MIMO Relay Channel

Chang-Hoon Lee, Seoul National University, Korea, Republic of; Jong-Ho Lee, Kongju National University, Korea, Republic of; Young-Woo Kwak, Seoul National University, Korea, Republic of; Young-Hoon Kim, Seoul National University, Korea, Republic of; and Seong-Cheol Kim, Seoul National University, Korea, Republic of

5 Robust Linear Processing for Downlink MIMO-Relay Systems

Ying Wang, Beijing University of Posts and Telecommunications, China; Feng Gong, Beijing University of Posts and Telecommunications, China; and Gen Li, Beijing University of Posts and Telecommunications, China

Wednesday 8 September 2010 16:00-17:30 Governor General III

6F: Interference Mitigation

Chair: Octavia Dobre,

1 Co-channel Interference Mitigation Capability of Fixed Relays Connected by Optical Fibre

Rong Zhang, University of Southampton, United Kingdom; Xinyi Xu, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

2 Error Probability Bounds of JMLSE Based Single Antenna Interference Cancellation Algorithms for MQAM-OFDM Systems

Zhenyu Zhou, Waseda University, Japan; Muhammad Tariq, Waseda University, Japan; and Takuro Sato, Waseda University, Japan

3 Low-Complexity Finger-Wise Interference Cancellation for Rake Receivers with Receive Diversity

Thorsten Clevorn, Infineon Technologies AG, Germany; Herbert Dawid, Infineon Technologies AG, Germany; Edgar Bolin, Infineon Technologies AG, Germany; and Christian Drewes, Infineon Technologies AG, Germany

4 Narrowband Interference Suppression for OFDM Systems with Guard Band

Zan Yang, Peking University, China; Tingting Zhao, Peking University, China; and Yuping Zhao, Peking University, China

5 Uplink Inter-Cell Interference Coordination by Nash Bargaining for OFDMA Networks

Mohammed Al-Rawi, Aalto University, Finland; and Riku Jäntti, Aalto University, Finland

Wednesday 8 September 2010 16:00-17:30 Nunavut

6G: Vehicular Communication

Chair: Xiaohui Liang, University of Waterloo

1 Solving the Coupon Collector's Problem for the Safety Beaconing in the IEEE 802.11p WAVE

Hyundoc Seo, Korea university, Korea, Republic of; Sangki Yun, Korea University, Korea, Republic of; and Hyogon Kim, Korea University, Korea, Republic of

2 Throughput Analysis of the IEEE 802.11p Enhanced Distributed Channel Access Function in Vehicular Environment

Chong Han, University of Surrey, United Kingdom; Mehrdad Dianati, University of Surrey, United Kingdom; Rahim Tafazolli, University of Surrey, United Kingdom; and Ralf Kernchen, University of Surrey, United Kingdom

3 Evaluation of Time-Space Efficiency in CSMA/CA and Slotted Vanets

Riccardo Scopigno, Istituto Superiore Mario Boella, Italy; and Hector Agustin Cozzetti, Istituto Superiore Mario Boella, Italy

4 Cognitive Radio Enabled Multi-channel Access for Vehicular Communications

Jui-Hung Chu, National Chiao Tung University, Taiwan; Kai-Ten Feng, National Chiao Tung University, Taiwan; Chen-Nee Chuah, University of California at Davis, United States; and Chin-Fu Liu, National Chiao Tung University, Taiwan

5 Availability Improvement for WLAN-based Train-Ground Communication Systems in Communication-based Train Control (CBTC)

Li Zhu, BeiJing Jiaotong University, China; F.Richard Yu, Carleton University, Canada; and Bin Ning, BeiJing Jiaotong University, China

Wednesday 8 September 2010 16:00-17:30 Nova Scotia

6H: Interference Coordination and Management

Chair: F. Richard Yu, Carleton University

1 Uplink Performance of Dynamic Interference Coordination under Fractional Power Control for LTE-Advanced Femtocells

Luis Guilherme Uzeda Garcia, Aalborg University, Denmark; Klaus I. Pedersen, Nokia Siemens Networks, Denmark; and Preben E. Mogensen, Nokia Siemens Networks and Aalborg University, Denmark

2 Location-Assisted Intercell Interference Management Scheme in Next Generation Wireless Networks Using Opportunistic Beamforming

Ali Y. Al-Zahrani, Carleton University, Canada; F. Richard Yu, Carleton University, Canada; and Ioannis Lambadaris, Carleton University, Canada

3 A Novel Uplink Interference Coordination Scheme Using High Interference Indicator

guangrong zhang, University of Science and Technology of China, China; chao zhang, University of Science and Technology of China, China; jun zhang, University of Science and Technology of China, China; and guo wei, University of Science and Technology of China, China

4 Cognitive Interference Management for LTE-A Femtocells With Distributed Carrier Selection

Lu Zhang, Alcatel-Lucent Bell Labs, Research and Innovation Center, Alcatel-Lucent Shanghai Bell Co., Ltd., China; Lin Yang, Alcatel-Lucent Bell Labs, Research and Innovation Center, Alcatel-Lucent Shanghai Bell Co., Ltd., China; and Tao Yang, Alcatel-Lucent Bell Labs, Research and Innovation Center, Alcatel-Lucent Shanghai Bell Co., Ltd., China

5 LTE Downlink Inter-Cell Interference Assessment in an Existing GSM Metropolitan Deployment

Arne Simonsson, Ericsson Research, Sweden; Bo Hagerman, Ericsson Research, Sweden; Jan Chistoffersson, Ericsson Research, Sweden; Lars Klockar, Ericsson Research, Sweden; Chrysostomos Koutsimanis, Ericsson Research, Sweden; and Peter Cosimini, Vodafone Technology Networks, United Kingdom

Wednesday 8 September 2010 16:00-17:30 Alberta

6I: Load Balancing in Wireless Networks

Chair: Xinsheng Zhou, University of Waterloo

1 Design of distributed and autonomic load balancing for self-organization LTE

Heng Zhang, Beijing University of Posts and Telecommunications, China; Xuesong Qiu, Beijing University of Posts and Telecommunications, China; Luoming Meng, Beijing University of Posts and Telecommunications, China; and Xidong Zhang, Beijing University of Posts and Telecommunications, China

2 On Mobility Load Balancing for LTE Systems

Raymond Kwan, NEC Telecom MODUS Ltd, United Kingdom; Rob Arnott, NEC Telecom MODUS Ltd, United Kingdom; Rob Patterson, NEC Telecom MODUS Ltd, United Kingdom; Riccardo Trivisonno, NEC Telecom MODUS Ltd, United Kingdom; and Mitsuhiro Kubota, NEC Corporation, Japan

3 On Radio Admission Control for LTE Systems

Raymond Kwan, NEC Telecom MODUS Ltd, United Kingdom; Rob Arnott, NEC Telecom MODUS Ltd, United Kingdom; and Mitsuhiro Kubota, NEC Corporation, Japan

4 A New Relay Based Dynamic Load Balancing Scheme in Cellular Networks

Zexi Yang, Tsinghua National Laboratory for Information ScienceTechnology, Tsinghua University, Beijing, China; and Zhisheng Niu, Tsinghua National Laboratory for Information Science and Technology, Tsinghua University, Beijing, China

5 Load Balance for Multi-Layer Reuse Scenarios on Mobile WiMAX System

Juliano Bazzo, Nokia Technology Institute (INdT), Brazil; André Cavalcante, Nokia Technology Institute (INdT), Brazil; Marco Sousa, Federal University of Pará (UFPA), Brazil; Lauri Kuru, Nokia Siemens Networks (NSN), Finland; and Jani Moilanen, Nokia Siemens Networks (NSN), Finland

Wednesday 8 September 2010 16:00-17:30 Confederation

6Pa: Transmission Technologies Posters III

1 On SNR statistics involving EESM-based Frequency Selective Feedbacks

Hui Song, University of Bedfordshire, United Kingdom; Raymond Kwan, University of Bedfordshire, United Kingdom; and Jie Zhang, University of Bedfordshire, United Kingdom

2 The Diversity-Multiplexing Tradeoff of One-side Interference Channel with Relay

Song Zhao, Beijing University of Posts and Telecommunications, China; Tiankui Zhang, Beijing University of Posts and Telecommunications, China; Zhimin Zeng, Beijing University of Posts and Telecommunications, China; and Yisheng Cao, China Mobile Communications Corporation, China

3 Truncated Convolutional Codes as a New Approach of Unequal Error Protection

Oliver Bredtmann, University of Duisburg-Essen, Germany; and Andreas Czylik, University of Duisburg-Essen, Germany

4 Cell-Specific Uplink Power Control for Heterogeneous Networks in LTE

Jacek Góra, Nokia Siemens Networks Poland, Poland; Klaus Pedersen, Nokia Siemens Networks Denmark, Denmark; Agnieszka Szufarska, Nokia Siemens Networks Poland, Poland; and Stanislaw Strzyżowski, Nokia Siemens Networks Poland, Poland

5 Dedicated Reference Signal Based Channel Estimation using Weighted Averaging Scheme in OFDM Systems

Hongzhong Yan, Fujitsu R&D Center Co., Ltd., China; Lei Zhang, Fujitsu R&D Center Co., Ltd., China; and Xin Wang, Fujitsu R&D Center Co., Ltd., China

6 Optimal Relay Location for Fading Relay Channels

Rui Yin, Zhejiang Univ., China; Yu Zhang, Zhejiang Univ., China; Guanding Yu, Zhejiang Univ., China; Zhaoyang Zhang, Zhejiang Univ., China; Jietao Zhang, Huawei Technologies Co., Ltd., China; and Halim Yanikomeroglu, Carleton University, Canada

Wednesday 8 September 2010 16:00-17:30 Confederation

6Pb: Ad-Hoc and Sensor Networks Posters

1 Secure and Efficient Data Aggregation for Wireless Sensor Networks

Xiaoyan Wang, University of Tsukuba, Japan; Jie Li, University of Tsukuba, Japan; Xiaoning Peng, Huaihua College, China; and Beiji Zou, Central South University, China

2 MYRPA: An Incentive System with Reduced Payment Receipts for Multi-hop Wireless Networks

Mohamed Mahmoud, University of Waterloo, Canada; and Sherman Shen, University of Waterloo, Canada

3 Detecting the Defective Nodes In Wireless Sensor Networks using the Nonlinear Consensus of Median

Mohammad Nikjoo-S, University of Toronto, Canada; and Konstantinos Plataniotis, University of Toronto, Canada

4 Using Security Context Pre-Transfer to Provide Security Handover Optimization for Vehicular Ad Hoc Networks

Kaiping Xue, University of Science and Technology of China, China; Peilin Hong, University of Science and Technology of China, China; and Xiaolei Tie, University of Science and Technology of China, China

5 A Model Based Connectivity Improvement Strategy for Vehicular Ad hoc Networks

Yang Yang, University of Science and Technology Beijing, China; Zhenqiang Mi, University of Science and Technology Beijing, China; James Yifei Yang, University of Waterloo, Canada; Guangjun Liu, Ryerson University, Canada; and Yuewei Wang, Public Security Marine Police Academy, China

Thursday 9 September 2010

Thursday 9 September 2010 11:00-12:30 Quebec

7A: Propagation Issues in Cooperative Communications

Chair: Cheng-Xiang Wang, Heriot-Watt-University of Edinburgh

1 On Non-Stationary Urban Macrocell Channels in a Cooperative Downlink Beamforming Scenario

Adrian Ispas, RWTH Aachen University, Germany; Christian Schneider, Ilmenau University of Technology, Germany; Gerd Ascheid, RWTH Aachen University, Germany; and Reiner Thomä, Ilmenau University of Technology, Germany

2 Propagation Channel Characterization for Amplify-and-Forward MIMO-Relaying Systems

Xuefeng Yin, Tongji University, China; Stan X. Lu, Huawei Technology Co., China; Byung-Jae Kwak, Electronics and Telecommunications Research Institute, Korea, Republic of; Hyun Kyu Chung, Electronics and Telecommunications Research Institute, Korea, Republic of; and Fuqiang Liu, Tongji University, China

3 On the Statistical Analysis of Equal Gain Combining over Multiple Double Rice Fading Channels in Cooperative Networks

Batool Talha, University of Agder, Norway; and Matthias Pätzold, University of Agder, Norway

4 Performance of Multihop Wireless Links over Generalized-K Fading Channels

Jianfei Cao, Beijing Jiaotong University, China; Lie-Liang Yang, University of Southampton, United Kingdom; and Zhangdui Zhong, Beijing Jiaotong University, China

5 MIMO Channel Characterization and Capacity Evaluation in an Outdoor Environment

Manuel Binelo, Federal University of Ceará, Fortaleza, Brazil; André L. F. de Almeida, Federal University of Ceará, Brazil; Jonas Medbo, Ericsson AB, Sweden; Henrik Asplund, Ericsson AB, Sweden; and F. Rodrigo P. Cavalcanti, Federal University of Ceará, Brazil

Thursday 9 September 2010 11:00-12:30 Provinces I

7B: Relaying II

Chair: Yohannes Alemseged Demessie, National Institute of Information and Communication Technology, Japan

1 Randomized DSFC with relay-assisted ARQ for Decentralized Wireless Relay Networks

Eungkuk Nam, Seoul National University, South Korea; and Jae Hong Lee, Seoul National University, South Korea

2 Joint Uplink and Downlink Relay Selection in Cooperative Cellular Networks

Wei Yang, Key Lab. of Universal Wireless Commun., Beijing University of Posts and Telecom. (BUPT), China; Lihua Li, Key Lab. of Universal Wireless Commun., Beijing University of Posts and Telecom. (BUPT), China; Gang Wu, Wireless Modem System Research, Device R&D, NOKIA, Shanghai, China; Haifeng Wang, Wireless Modem System Research, Device R&D, NOKIA, Shanghai, China; and Ying Wang, Key Lab. of Universal Wireless Commun., Beijing University of Posts and Telecom. (BUPT), China

3 Multi-hop Relay Networks with Multiple-antenna Equipped Source and Destination

Chintha Tellambura, University of Alberta, Canada; Gayan Amarasinghe, University of Alberta, Canada; and Masoud Ardakani, University of Alberta, Canada

4 Retransmission Strategies for Symmetric Relaying Using Superposition Modulation

Chaitanya Tumula V. K., Linköping University, Sweden; and Erik G. Larsson, Linköping University, Sweden

5 Cooperative Diversity Scheme with Two Relay Stations and Linear Coherent Detection

Vieira Robson, Nokia Technology Institute, Brazil; Renato Machado, Federal University of Santa Maria, Brazil; and Mario Noronha, Federal Institute of Santa Catarina, Brazil

Thursday 9 September 2010 11:00-12:30 Provinces II

7C: Locationing & Tracking II

Chair: Letizia Lo Presti, Politecnico di Torino, Italy

1 A Novel Indoor Navigation Approach Employing Motion Statistics

Manh-Hung Le, Worcester Polytechnic Institute, United States; Dimitris Saragas, Worcester Polytechnic Institute, United States; Nathan Webb, Worcester Polytechnic Institute, United States; Richard Vaz, Worcester Polytechnic Institute, United States; Alexander Wyglinski, Worcester Polytechnic Institute, United States; Michael Barry, University of Limerick, Ireland; and Sean McGrath, University of Limerick, Ireland

2 Mobile Location Finding Using ATSC Mobile/Handheld Digital TV RF Watermark Signals

Bo Rong, Communications Research Centre Canada, Canada; Bo Liu, Shanghai Jiao Tong University, China; Yiyang Wu, Communications Research Centre Canada, Canada; Gilles Gagnon, Communications Research Centre Canada, Canada; Lin Gui, Shanghai Jiao Tong University, China; and Wenjun Zhang, Shanghai Jiao Tong University, China

3 Low-Feedback Multiple-Access and Scheduling via Location and Geometry Information

Congzheng Han, University of Bristol, United Kingdom; Matthew Webb, University of Bristol, United Kingdom; Angela Doufexi, University of Bristol, United Kingdom; and Mark Beach, University of Bristol, United Kingdom

4 Vehicle Tracking Using Particle Filter in Wi-Fi Network

Henghui Lu, Tsinghua University, China; Sheng Zhang, Tsinghua University, China; Xingchuan Liu, Tsinghua University, China; and Xiaokang Lin, Tsinghua University, China

5 A Gaussian Model for Dead-Reckoning Mobile Sensor Position Error

Ahmed Arafa, University of Calgary, Canada; and Geoffrey Messier, University of Calgary, Canada

Thursday 9 September 2010 11:00-12:30 Governor General I

7D: Multiuser MIMO Precoding

Chair: Witold Krzymien, University of Alberta, Canada

1 Adaptive Signal Dimensioning for Multi-User MIMO Downlink

Bin Li, Huawei Technologies, China; and Yi Luo, Huawei Technologies, China; Xiaodong Wang, Columbia University, United States

2 User Scheduling for Network MIMO Systems with Successive Zero-Forcing Precoding

Shreeram Sigdel, University of Alberta / TRILabs, Canada; and Witold A. Krzymien, University of Alberta / TRILabs, Canada

3 Multiuser MIMO Downlink with Linear Precoding for Full Multiplexing gain

Jinkyu Kang, Korea Advanced Institute of Science Technology (KAIST), Korea, Republic of; Keonkook Lee, Korea Advanced Institute of Science Technology (KAIST), Korea, Republic of; Jungho Myung, Korea Advanced Institute of Science Technology (KAIST), Korea, Republic of; and Joonhyuk Kang, Korea Advanced Institute of Science Technology (KAIST), Korea, Republic of

4 A channel adaptive power allocation scheme based on SLNR precoding for multiuser MIMO systems

Jie Wang, Southeast University, China

5 Linear Selective Channel Inversion Technique for Multi-user MIMO systems

Ulises Pineda Rico, Universidad Autónoma de San Luis Potosí, Mexico; Enrique Stevens-Navarro, Universidad Autónoma de San Luis Potosí, Mexico; Lin Yang, Alcatel-Lucent Bell Labs, China; and Emad Alsusa, The University of Manchester, United Kingdom

Thursday 9 September 2010 11:00-12:30 Governor General II

7E: Equalization and Detection

Chair: Abderrazak Abdaoui,

1 Asymptotic Performance of Lp-Norm MIMO Detection

Imtiaz Ahmed, University of British Columbia, Canada; Robert Schober, University of British Columbia, Canada; and Ranjan Mallik, Indian Institute of Technology, India

2 Frequency-domain Block Signal Detection with QRM-MLD for Frequency-domain Filtered Single-carrier Transmission

Tetsuya Yamamoto, Tohoku University, Japan; Kazuki Takeda, Tohoku University, Japan; and Fumiyuki Adachi, Tohoku University, Japan

3 On the Design of Turbo Equalizers for SC-FDE Schemes with Different Error Protections

Rui Dinis, FCT, UNL, Portugal; João Silva, Instituto das Telecomunicações, Portugal; Nuno Souto, Instituto das Telecomunicações, Portugal; and Paulo Montezuma, UNINOVA, Portugal

4 Sampling Point Selection Scheme for Fractional Sampling-OFDM Receivers on Fast Time-Varying Multipath Channels

Tatsuya Kobayashi, Keio University, Japan; Haruki Nishimura, Keio University, Japan; and Yukitoshi Sanada, Keio University, Japan

5 Single-carrier Hybrid ARQ Using Joint Iterative Tx/Rx MMSE-FDE & ISI Cancellation

Kazuki Takeda, Tohoku University, Japan; and Fumiyuki Adachi, Tohoku University, Japan

Thursday 9 September 2010 11:00-12:30 Governor General III

7F: Coding

Chair: Mohamed Marey,

1 Designing LDPC Codes with Gated Noise Model for Terrestrial Mobile DTV Channels

Bo Liu, Shanghai Jiao Tong University, China; Liang Gong, Shanghai Jiao Tong University, China; Yin Xu, Shanghai Jiao Tong University, China; Bo Rong, Communications Research Centre Canada, Canada; Yiyang Wu, Communications Research Centre Canada, Canada; Gilles Gagnon, Communications Research Centre Canada, Canada; Lin Gui, Shanghai Jiao Tong University, China; and Wenjun Zhang, Shanghai Jiao Tong University, China

2 Joint Channel-Network Coding for the Semi-orthogonal Multiple Access Relay Channel

Atoua Hatefi, Orange Labs, Supélec, France; Raphaël Visoz, Orange Labs, France; and Antoine O. Berthet, Supélec, France

3 Joint Source-Channel Coding Using Multiple Label Mapping

Valtteri Tervo, University of Oulu + Japan Advanced Institute of Science and Technology, Finland; Tadashi Matsumoto, University of Oulu + Japan Advanced Institute of Science and Technology, Finland; and Juha Karjalainen, University of Oulu, Finland

4 Modified Progressive Edge-Growth Algorithm for Fast-Encoding LDPC Codes

Xueqin Jiang, Chonbuk National University, Korea, Republic of; Moon Ho Lee, Department of Electronics and Information Engineering, Korea, Republic of; and Mi Sung Lee, Department of Electronics and Information Engineering, Korea, Republic of

5 Frequency-Domain Punctured Turbo Codes

Koichi Tahara, Tokyo University of Science, Japan; and Kenichi Higuchi, Tokyo University of Science, Japan

Thursday 9 September 2010 11:00-12:30 Nunavut

7G: Security and Privacy in VANETS

Chair: Rongxing Lu, University of Waterloo

- 1 PPC: Privacy-preserving Chatting in Vehicular Peer-to-peer Networks**
Xiaohui Liang, University of Waterloo, Canada; Rongxing Lu, University of Waterloo, Canada; Xiaodong Lin, University of Ontario Institute of Technology, Canada; and Xuemin (Sherman) Shen, University of Waterloo, Canada
- 2 A Secure Multi-Application Platform for Vehicle Telematics**
Jef Maerlen, Katholieke Universiteit Leuven, Belgium; Sam Michiels, Katholieke Universiteit Leuven, Belgium; Stefan Van Baelen, Katholieke Universiteit Leuven, Belgium; Christophe Huygens, Katholieke Universiteit Leuven, Belgium; and Wouter Joosen, Katholieke Universiteit Leuven, Belgium
- 3 Framework to Support Per Second Shifts of Pseudonyms in Regional VANETS**
Joseph Benin, Georgia Institute of Technology, United States; Henry Owen, Georgia Institute of Technology, United States; and Michael Nowatkowski, Georgia Institute of Technology, United States
- 4 Secure and Efficient Trust Opinion Aggregation for Vehicular Ad-hoc Networks**
Chen Chen, University of Waterloo, Canada; Jie Zhang, Nanyang Technological University, Singapore; Robin Cohen, University of Waterloo, Canada; and Pin-Han Ho, University of Waterloo, Canada
- 5 Performance Evaluation of Mobile Multicast Session Initialization Techniques for Remote Software Upload in Vehicle ECUs**
Irina Hossain, Wayne State University, United States; Moon Ho Hwang, Member, IEEE, United States; and Syed Masud Mahmud, Wayne State University, United States

Thursday 9 September 2010 11:00-12:30 Nova Scotia

7H: Interference Suppression and Cancellation

Chair: Sami (Hakam) Muhaidat, Simon Fraser University

- 1 Adaptive Interference Cancellation System for Multihop WCDMA 3G Networks**
Saad Mahboob, Simon Fraser University, Canada; Shawn Stapleton, Simon Fraser University, Canada; and Sami Muhaidat, Simon Fraser University, Canada
- 2 Theoretical Analysis of CDMA Reverse Link Capacity with Interference Cancellation**
Gen Cao, Beijing University of PostsTelecoms, China; Shaohong Wu, Beijing University of PostsTelecoms, China; Jing Wang, Beijing University of PostsTelecoms, China; Ruiming Zheng, Beijing University of PostsTelecoms, China; Xin Zhang, Beijing University of PostsTelecoms, China; and Dacheng Yang, Beijing University of Posts and Telecoms, China
- 3 Effective Interference Cancellation Scheme for Device-to-Device Communication Underlying Cellular Networks**
Shaoyi Xu, Beijing Jiaotong University, China; Haiming Wang, Nokia (China) Investment CO., LTD., Beijing, China; Tao Chen, Nokia Device R&D, Oulu, Finland; Qing Huang, Beijing Jiaotong University, China; and Tao Peng, Beijing University of Posts and Telecommunications, China
- 4 Iterative Soft Interference Cancellation for HSPA Uplink**
Wei Zeng, Qualcomm, United States; Sharad Sambhwani, Qualcomm, United States; Wei Zhang, Qualcomm, United States; and Krzys Wegrzyn, Qualcomm, United States
- 5 Interference Suppression Based Beamforming Scheme for LTE Downlink MIMO**
Fei Wang, Beijing University of Posts and Telecommunications, China; Yongyu Chang, Beijing University of Posts and Telecommunications, China; Yafeng Wang, Beijing University of Posts and Telecommunications, China; Jing Jin, Beijing University of Posts and Telecommunications,

China; and Dacheng Yang, Beijing University of Posts and Telecommunications, China

Thursday 9 September 2010 11:00-12:30 Alberta

7I: Handover in Wireless Networks I

Chair: F. Richard Yu, Carleton University

- 1 A Communication System with a Fast Handover under a High Speed Mobile Environment**
Kazuhiro Yamada, Central Japan Railway Company, Japan; Yousuke Sakai, Central Japan Railway Company, Japan; Takano Suzuki, The University of Tokyo, Japan; Yoshihiro Kawahara, The University of Tokyo, Japan; Tohru Asami, The University of Tokyo, Japan; and Hitoshi Aida, The University of Tokyo, Japan
- 2 A Network-Controlled Architecture for SCTP Hard Handover**
Khadija Daoud, Orange Labs, France; Karine Guillouard, Orange Labs, France; Philippe Herbelin, Orange Labs, France; and Noel Crespi, Institut Telecom, Telecom SudParis, France
- 3 A Novel QoS Mapping Mechanism in Integrated Satellite and Terrestrial Networks**
Guangyu Cao, Beijing University of Posts and Telecommunications, China; Ying Wang, Beijing University of Posts and Telecommunications, China; and Wenqing Yao, Beijing University of Posts and Telecommunications, China
- 4 A Seamless Handoff Scheme for Train-Ground Communication Systems in CBTC**
Li Zhu, Beijing Jiaotong University, China; F.Richard Yu, Carleton University, Canada; and Bin Ning, Beijing Jiaotong University, China
- 5 Effective SNR Based Handoff Scheme in Heterogeneous Cellular Environments**
Dongyoung Kim, Seoul National University, Korea, Republic of; Du Ho Kang, Seoul National University, Korea, Republic of; and Sunghyun Choi, Seoul National University, Korea, Republic of

Thursday 9 September 2010 11:00-12:30 Confederation

7P: Cognitive Radio and Cooperative Communications Posters 2

- 1 Two-user Cooperative Transmission Using Superposition Modulation and Soft Information Combining**
Rui Lin, University of Canterbury, New Zealand; Philippa Martin, University of Canterbury, New Zealand; and Desmond Taylor, University of Canterbury, New Zealand
- 2 Outage Improvement in Cognitive Relay Networks by Using a Generalized Regional Model**
Sohaib Khan, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of; Yonghoon Choi, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of; and Youngnam Han, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of
- 3 Performance Improvement of OFDM System with the Spectrum-Sidelobe-Suppressed Precoding**
Renhui Xu, NCRL, SEU, China; Ming Chen, NCRL, SEU, China; Hai Wang, Nanjing Institute of Communication Engineering, China; and Weibo Yu, Nanjing Institute of Communication Engineering, China
- 4 User Centric Coordinated Multi Point Transmission**
Wolfgang Mennerich, Nokia Siemens Networks, Germany; and Wolfgang Zirwas, Nokia Siemens Networks, Germany
- 5 Primary User Activity Based Channel Allocation in Cognitive Radio Networks**
Wei Wang, Beijing University of Posts and Telecommunications, China; Tiejun Lv, Beijing University of Posts and Telecommunications, China; Taotao Wang, Beijing University of Posts and Telecommunications, China; and Xuefen Yu, Beijing University of Posts and Telecommunications, China

6 Path Selection Algorithms for Multi-hop VANETs
Chulhee Jang, Seoul National University, Korea, Republic of; and Jae Hong Lee, Seoul National University, Korea, Republic of

7 Performance Analysis of Generalized Selection Combining For Decode-and-Forward Cooperative-Diversity Networks
Salama Ikki, University of Waterloo, Canada; and Mohamed Ahmed, Memorial University of Newfoundland, Canada

8 Multiple Relay Nodes Selection Scheme with Zero Forcing Weighting Matrix in MIMO Relay Networks
Jun Liu, Beijing Jiaotong University, China; Zhengding Qiu, Beijing Jiaotong University, China; Min Wu, Beijing Jiaotong University, China; and Chao Shen, Beijing Jiaotong University, China

9 Optimal Capacity in Underlay Paradigm based Cognitive Radio Network with Cooperative Transmission
Changqing Luo, Key Laboratory of Universal Wireless Communication, Ministry of Education, Beijing University of Post, China; F. Richard Yu, Department of Systems and Computer Engineering, Carleton University, Ottawa, ON, Canada, Canada; and Hong Ji, Key Laboratory of Universal Wireless Communication, Ministry of Education, Beijing University of Post, China

10 Optimizing time and power allocation for four-node wireless broadcasting channel with relay
Sunyoung Lee, Yonsei University, Korea, Republic of; and Seong-Lyun Kim, Yonsei University, Korea, Republic of

11 Transmit Preprocessing for Cluster Based Multi-user Relay Systems
Lei Song, Key Laboratory of Universal Wireless Communications, Ministry of Education, Beijing University of Po, China; Lihua Li, Key Laboratory of Universal Wireless Communications, Ministry of Education, Beijing University of Po, China; Gang Wu, Wireless Modem System Research, Devices R&D, Nokia, Shanghai 200002, P.R.China, China; Chaowei Wang, Key Laboratory of Universal Wireless Communications, Ministry of Education, Beijing University of Po, China; and Haifeng Wang, Wireless Modem System Research, Devices R&D, Nokia, Shanghai 200002, P.R.China, China

12 Performance Evaluation For Resource Allocation Algorithms In Comp Systems
Rodrigo Batista, Wireless Telecom Research Group (GTEL), Brazil; Ricardo Santos, Wireless Telecom Research Group (GTEL), Brazil; Tarcisio Maciel, Wireless Telecom Research Group (GTEL), Brazil; Walter Freitas, Wireless Telecom Research Group (GTEL), Brazil; and F. Rodrigo Cavalcanti, Wireless Telecom Research Group (GTEL), Brazil

Thursday 9 September 2010 14:00-15:30 Quebec

8A: Network Coding & MAC

Chair: Humphrey Rutagwema, Communications Research Centre Canada

1 Reliable Network Coded MAC in Vehicular Ad-Hoc Networks
Behnam Hassanabadi, University of Toronto, Canada; and Shahrokh Valaee, University of Toronto, Canada

2 Energy-Efficient Coded Routing with Selective Transmission Power for Wireless Sensor Networks
Jie Tong, Sino-German Joint Software Institute, Beihang University, China; Depei Qian, Sino-German Joint Software Institute, Beihang University, China; and Zhigao Du, Sino-German Joint Software Institute, Beihang University, China

3 Analysis of IEEE 802.15.4 Throughput in Beaconless Mode on micaZ under TinyOS 2
Nelson I. Dopico, Universidad Politecnica de Madrid, Spain; Carlos Gil-Soriano, Universidad Politecnica de Madrid, Spain; Iñigo Arrazola, Universidad Politecnica de Madrid, Spain; and Santiago Zazo, Universidad Politecnica de Madrid, Spain

4 Capacity of Network Coding for Mobile Ad Hoc Networks
Yan Shi, Xidian University, China; Min Sheng, Xidian University, China; Jiandong Li, Xidian University, China; and Wenbing Zhang, Xidian University, China

5 On the Performance of Network Coding for Multicast Data Delivery in Large Scale Mobile Ad Hoc Networks
Emeka Egbogah, University of Calgary, Canada; Abraham Fapojuwo, University of Calgary, Canada; and Zongpeng Li, University of Calgary, Canada

Thursday 9 September 2010 14:00-15:30 Provinces I

8B: MIMO Channel Propagation and Capacity

Chair: Reiner Thomae, TU Ilmenau

1 User Presence and Antenna Efficiency Effects on MIMO Link Performance
Shirook Ali, Research In Motion Limited, Canada; Amin Mobasher, Research In motion Limited, Canada; and Paul Lusina, Research In Motion limited, Canada

2 Wireless Neighborhood Area Network Path Loss Characterization at 5.7 GHz
Saeed Ghassemzadeh, AT&T Labs - Research, United States; Harry Worstell, AT&T Labs - Research, United States; and Robert Miller, AT&T Labs - Research, United States

3 Statistical Distributions for Link Gain and Capacity of MIMO-GMD Transceivers in Rayleigh Fading Channels
Ping-Heng Kuo, ITRI, Taiwan; Jia-Hao Wu, ITRI, Taiwan; Yu-Tao Hsieh, ITRI, Taiwan; and Pang-An Ting, ITRI, Taiwan

4 Incorporating Correlation Matrices into Hardware Triply Selective Fading Channel Emulators using Kronecker Product
Fei Ren, Missouri University of Science Technology, United States; and Yahong Zheng, Missouri University of Science and Technology, United States

5 Capacity Evaluation of MIMO Antenna Systems Using Spherical Harmonics Expansion
Leandro Ximenes, Federal University of Ceará, Brazil; and André L. F. Almeida, Federal University of Ceará, Brazil

Thursday 9 September 2010 14:00-15:30 Provinces II

8C: Relaying III

Chair: Salama Ikki, University of Waterloo, Canada

1 Two-way Relaying Using Constant Envelop Modulation and Phase-Superposition-Phase-Forward
Huai Tan, Simon Fraser University, Canada; Paul Ho, Simon Fraser University, Canada; and Sami Muhaidat, Simon Fraser University, Canada

2 A Time Domain Channel Estimation Scheme for Equalize-and-Forward Relay-Assisted Systems
Darlene Neves, Instituto de Telecomunicações, Portugal; Carlos Ribeiro, Instituto de Telecomunicações, Portugal; Adão Silva, Instituto de Telecomunicações, Portugal; and Atílio Gameiro, Instituto de Telecomunicações, Portugal

3 Interference Cancellation based Opportunistic Relaying with Multiple Decode-and-Forward Relays
Young-bin Kim, KAIST, South Korea; and Wan Choi, KAIST, South Korea

4 A Study of Optimization Problem for Amplify-and-Forward Relaying over Weibull Fading Channels
Salama Ikki, University of Quebec, Canada; and Sonia Aissa, University of Quebec, Canada

5 Incremental Relaying with Imperfect Feedback in Wireless Cooperative Networks

Tobias Renk, Karlsruhe Institute of Technology, Germany; Holger Jäkel, Karlsruhe Institute of Technology, Germany; and Friedrich Jondral, Karlsruhe Institute of Technology, Germany

Thursday 9 September 2010 14:00-15:30 Governor General I

8D: MIMO Capacity

Chair: Yue Wang, Toshiba Research Europe Ltd., United Kingdom

1 Optimal Antenna Deployment for Capacity Maximization in a MIMO Rayleigh Fading Channel

Le Cao, National University of Singapore, Singapore; and Pooi Yuen Kam, National University of Singapore, Singapore

2 On Capacity-Maximizing Angular Densities of Multipath in MIMO Channels

Georgy Levin, University of Ottawa, Canada; and Sergey Loyka, University of Ottawa, Canada

3 Outage Capacity of a Hybrid MIMO Algorithm that Employs Multiple QR Decompositions

Maher Arar, University of Ottawa, Canada; and Abbas Yongacoglu, University of Ottawa, Canada

4 The Effect of Training-Based Channel Estimation on the Capacity of Closed-loop MIMO Systems with Imperfect CSI Feedback

S. Alireza Banani, Simon Fraser University, Canada; and Rodney G. Vaughan, Simon Fraser University, Canada

5 Sum-rate Analysis of Multiuser MIMO Systems with Codebook-based Incremental Beamforming

Jun Zhu, University of Victoria, Canada; and Hong-Chuan Yang, University of Victoria, Canada

Thursday 9 September 2010 14:00-15:30 Governor General II

8E: Channel Estimation I

Chair: Kareem Baddour, CRC

1 Impact of CSI on the Performance of Multi-hop Wireless Relay Networks

Wael Jaafar, École Polytechnique de Montréal, Canada; David Haccoun, École Polytechnique de Montréal, Canada; and Wessam Ajib, Université du Québec à Montréal, Canada

2 Channel Estimation and Optimal Training Design for Amplify and Forward MIMO Relay Channel under Spatial Fading Correlation

Jiyong Pang, Alcatel-Lucent Shanghai Bell, China; Gang Shen, Alcatel-Lucent Shanghai Bell, China; Dongyao Wang, Alcatel-Lucent Shanghai Bell, China; Lei Jiang, Alcatel-Lucent Shanghai Bell, China; and Wei Wang, Alcatel-Lucent Shanghai Bell, China

3 Channel Estimation in OFDM Systems in the Presence of Inter-Cell Interference

Chandra Bontu, Research In Motion Limited, Canada; and Amin Mobasher, Research In Motion Limited, Canada

4 DFT-Based Channel Estimation and Noise Variance Estimation Techniques for Single-Carrier FDMA

Gillian Huang, University of Bristol, United Kingdom; Andrew Nix, University of Bristol, United Kingdom; and Simon Armour, University of Bristol, United Kingdom

5 Iterative Dual Diagonal LMMSE Channel Estimation in OFDM Systems

Nian Geng, City University of Hong Kong, Hong Kong; Ping Li, City University of Hong Kong, Hong Kong; Xiaojun Yuan, City University of Hong Kong, Hong Kong; and Lam Fat Yeung, City University of Hong Kong, Hong Kong

Thursday 9 September 2010 14:00-15:30 Governor General III

8F: Multiuser

Chair: Abderrazak Abdaoui,

1 Cooperative Selection Diversity in Wireless Multiuser Relay Networks

Nan Yang, University of New South Wales, Australia; Maged ElKashlan, CSIRO, Australia; and Jinhong Yuan, University of New South Wales, Australia

2 Generalised Vector Precoding Design Based on the MBER Criterion for Multiuser Transmission

Wang Yao, University of Southampton, United Kingdom; Sheng Chen, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

3 Successive Cancellation of Power Amplifier Distortion for Multiuser Detection

Ali Soltani Tehrani, Chalmers University of Technology, Sweden; Haiying Cao, Chalmers University of Technology, Sweden; Ali Behravan, Ericsson AB, Sweden; Thomas Eriksson, Chalmers University of Technology, Sweden; and Christian Fager, Chalmers University of Technology, Sweden

4 Multi-User Channel Estimation for Interference Mitigation in the LTE-Advanced Uplink

Zhijun Rong, Technische Universität Dresden, Germany; and Gerhard Fettweis, Technische Universität Dresden, Germany

5 A Multi-User Receiver for PUCCH LTE FORMAT 1 in Non-Cooperative Multi-Cell Architectures

Icaro Silva, Federal University of Ceará, Brazil; André Almeida, Federal University of Ceará, Brazil; Robert Baldemair, Ericsson Research, Sweden; Sorour Falahati, Ericsson Research, Sweden; and Rodrigo Cavalcanti, Federal University of Ceará, Brazil

Thursday 9 September 2010 14:00-15:30 Nunavut

8G: Vehicular Communication Networks

Chair: Sangheon Pack, Korea University

1 An Optimal Handoff Decision Algorithm for Communication-Based Train Control (CBTC) Systems

Li Zhu, BeiJing Jiaotong University, China; F.Richard Yu, Carleton University, Canada; and Bin Ning, BeiJing Jiaotong University, China

2 Location-Based Directional Broadcast for Inter-Vehicle Communications

Li-Der Chou, National Central University, Taiwan; and Yao-Tsung Yang, Chungwa Telecom Laboratories, Taiwan

3 Signal Design and Coding for High-Bandwidth OFDM in Car-to-Car Communications

Martin Braun, Karlsruhe Institute of Technology, Germany; Yves Koch, Karlsruhe Institute of Technology, Germany; Christian Sturm, Karlsruhe Institute of Technology, Germany; and Friedrich Jondral, Karlsruhe Institute of Technology, Germany

4 The Impact of Quality of Services in Chinese Train Control System on Train Delays Analysis

Wenyi Jiang, Beijing Jiaotong University, China; Xin Chen, Beijing Jiaotong University, China; and Zhangdui Zhong, Beijing Jiaotong University, China

5 A Measurement Study on Internet Access in Vehicular Wi-Fi Networks

Younghyun Kim, Korea University, Korea, Republic of; Jaeduck Ko, Korea University, Korea, Republic of; Wonjung Kim, Korea University, Korea, Republic of; and Sangheon Pack, Korea University, Korea, Republic of

Thursday 9 September 2010 14:00-15:30 Nova Scotia

8H: Scheduling

Chair: Mehrdad Dianati, University of Surrey

- 1 Opportunistic Scheduling with Reduced Feedback**
Husni I. H. Abu Arja, University of Surrey, United Kingdom; and Mehrdad Dianati, University of Surrey, United Kingdom
- 2 QoS Assured Uplink Scheduler for WiMAX Networks**
Perumalraja Rengaraju, Carleton University, Canada; Chung-Horng Lung, Carleton University, Canada; and Anand Srinivasan, EION Inc, Canada
- 3 Coordinated Scheduling based on Overload Indicator for LTE/LTE-A Uplink**
Minghai Feng, DOCOMO Beijing Communications Laboratories Co., Ltd, China; Xiaoming She, DOCOMO Beijing Communications Laboratories Co., Ltd, China; and Lan Chen, DOCOMO Beijing Communications Laboratories Co., Ltd, China
- 4 Performance Analysis of Proportional Fair Scheduling in OFDMA Wireless Systems**
Rabie Almatarnah, Memorial University of Newfoundland, Canada; Mohamed Ahmed, Memorial University of Newfoundland, Canada; and Octavia Dobre, Memorial University of Newfoundland, Canada
- 5 Fairness Improvement of Maximum C/I Scheduler by Dumb Antennas in Slow Fading Channel**
Xiaoyan Bi, Huawei Technologies. Co.,Ltd., China; Jiayin Zhang, Huawei Technologies. Co.,Ltd., China; Yi Wang, Huawei Technologies. Co.,Ltd., China; and Pramod Viswanath, University of Illinois, United States

Thursday 9 September 2010 14:00-15:30 Alberta

8I: Medium Access Control

Chair: Hao Liang, University of Waterloo

- 1 The Mobility Impact in IEEE 802.11p Infrastructureless Vehicular Networks**
Waleed Alasmary, University of Waterloo, Canada; and Weihua Zhuang, University of Waterloo, Canada
- 2 Energy per useful packet optimization on a TDMA HAP channel**
Francisco Ganhão, CTS, Uninova, Dep. de Eng. Electrotécnica, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa, IT, Instituto de Telecomunicações, Portugal; Miguel Pereira, CTS, Uninova, Dep. de Eng. Electrotécnica, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa, IT, Instituto de Telecomunicações, Portugal; Luis Bernardo, CTS, Uninova, Dep. de Eng. Electrotécnica, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa, Portugal; Rui Dinis, CTS, Uninova, Dep. de Eng. Electrotécnica, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa, IT, Instituto de Telecomunicações, Portugal; Nuno Souto, ISCTE, Instituto de Telecomunicações, Portugal; João Silva, ISCTE, Instituto de Telecomunicações, Portugal; Rodolfo Oliveira, CTS, Uninova, Dep. de Eng. Electrotécnica, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa, Portugal; and Paulo Pinto, CTS, Uninova, Dep. de Eng. Electrotécnica, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa, Portugal
- 3 An Enhanced Collision-Avoidance MAC Protocol for IEEE 802.15.4**
Feng Wang, Peking University, China; Dou Li, Peking University, China; and Yuping Zhao, Peking University, China
- 4 Performance of Uplink Carrier Aggregation in LTE-Advanced Systems**
Hua Wang, Aalborg University, Denmark; Claudio Rosa, Nokia Siemens Networks, Denmark; and Klaus Pedersen, Nokia Siemens Networks, Denmark

5 Centralized Power Allocation for Interference Limited Networks

Cédric Abgrall, CEA, LETI, MINATEC, France; Emilio Calvanese Strinati, CEA, LETI, MINATEC, France; and Jean-Claude Belfiore, TELECOM ParisTech, France

Thursday 9 September 2010 14:00-15:30 Confederation

8P: Wireless Networks Posters

- 1 A Data-scheduling Mechanism for Multi-homed Mobile Terminals with Disparate Link Latencies**
Farhan Hyder Mirani, Telecom ParisTech, France; Nadia Boukhatem, Telecom ParisTech, France; and Minh Anh Tran, University of Paris-Est (Paris 12), France
- 2 Semi-Flooding Location Service**
Eric Renault, Institut Télécom -- Télécom SudParis, France; Ebtisam Amar, CNAM, France; Hervé Costantini, CNAM, France; and Selma Boumerdassi, CNAM, France
- 3 Traffic-aware Routing Protocol for Cognitive Network**
Yang Xu, Xidian University, China; Min Sheng, Xidian University, China; and Yan Zhang, Xidian University, China
- 4 Resource Allocation in Successive Relaying for Half-Duplex Relay-Based OFDMA Systems**
Xiaofan Li, Beijing University of Posts and Telecommunications, China; Jianhua Zhang, Beijing University of Posts and Telecommunications, China; Yi Liu, Beijing University of Posts and Telecommunications, China; and Ping Zhang, Beijing University of Posts and Telecommunications, China
- 5 A Simulation Study of the Downlink Capacity of High Speed Wideband MIMO Cellular Systems**
Ben-Wah Kuang, École Polytechnique de Montréal, Canada; and Jean-François Frigon, École Polytechnique de Montréal, Canada
- 6 An Efficient Authentication Scheme for Security and Privacy Preservation in V2I Communications**
Jung-Yoon Kim, Sungkyunkwan University, South Korea; Hyoung-Kee Choi, Sungkyunkwan University, South Korea; and John Copeland, Georgia Institute of Technology, United States
- 7 Biconnecting a Network of Mobile Robots using Virtual Angular Forces**
Arnaud Casteigts, SITE, University of Ottawa, Canada; Jérémie Albert, LaBRI, University of Bordeaux, France; Serge Chaumette, LaBRI, University of Bordeaux, France; Amiya Nayak, SITE, University of Ottawa, Canada; and Ivan Stojmenovic, SITE, University of Ottawa, Canada
- 8 Efficient Certificate Revocation in Vehicular Networks using NGN Capabilities**
Iván Lequerica, Telefonica I+D, Spain; Juan A. Martinez, University of Murcia, Spain; and Pedro M. Ruiz, University of Murcia, Spain
- 9 Impact of the Pre-authentication Performance in Vehicular Networks**
Juan A. Martinez, University of Murcia, Spain; Pedro M. Ruiz, University of Murcia, Spain; and Rafael Marin, University of Murcia, Spain
- 10 Max-Min Throughput-Optimal Multicast Link Adaptation for Non-Identically Distributed Link Qualities**
Jörg Huschke, Ericsson GmbH, Eurolab, Germany
- 11 Paging Overhead Reduction for WiMAX Networks**
Ming-Hung Tao, ITRI, Taiwan; and Ying-Chuan Hsiao, ITRI, Taiwan
- 12 QoS-Enabled Improvements for the Network Mobility Protocol**
Rafidah Md Noor, University of Malaya, Malaysia; and Christopher Edwards, Lancaster University, United Kingdom

Thursday 9 September 2010 16:00-17:30 Quebec

9A: Protocols and Algorithms for Vehicular Networks

Chair: Nei Kato, Tohoku University, Japan

1 Congestion Control Based on Channel Occupancy in Vehicular Broadcast Networks

Yaser Pourmohammadi Fallah, University of California, Berkeley, United States; ChingLing Huang, University of California, Berkeley, United States; Raja Sengupta, University of California, Berkeley, United States; and Hariharan Krishnan, General Motors, United States

2 A Novel Algorithm to Control Contents Selectively for Vehicular Communication Networks

Zhou Su, Waseda University, Japan; Pinyi Ren, Xi'an Jiaotong University, China; Rongtao Xu, Beijing Jiaotong University, China; Jiro Katto, Waseda University, Japan; and Yasuhiko Yasuda, Waseda University, Japan

3 Effect of Vehicle Mobility on Connectivity of Vehicular Ad Hoc Networks

Salman Durrani, The Australian National University, Canberra, Australia; Xiangyun Zhou, The Australian National University, Canberra, Australia; and Abhas Chandra, The Australian National University, Canberra, Australia

4 Efficient Gateway Discovery Algorithms for Delay-tolerant and Delay-constrained Data Traffic in Vehicular Ad-hoc Networks

Francisco Ros, University of Murcia, Spain; and Pedro Ruiz, University of Murcia, Spain

5 On the Performance of Imperfect Channel Estimation for Vehicular Ad-Hoc Networks

Ali Zarei Ghanavati, Simon Fraser University, Canada; Udit Pareek, Simon Fraser University, Canada; Sami Muhaidat, Simon Fraser University, Canada; and Daniel Lee, Simon Fraser University, Canada

Thursday 9 September 2010 16:00-17:30 Provinces I

9B: Novel Cognitive Radio / Dynamic Spectrum Access Paradigms II

Chair: Oliver Holland, Kings College London, UK

1 Utilizing Multipath Clusters in Cognitive Radio Systems

Ghassan Dahman, Carleton University, Canada; Roshdy Hafez, Carleton University, Canada; and Robert Bultitude, Communications Research Centre, Canada

2 A Hybrid Cognitive Radio System: A Combination of Underlay and Overlay Approaches

Jinhyung Oh, KAIST, South Korea; and Wan Choi, KAIST, South Korea

3 Cognitive Multicast Pilot Scheduling for Heterogeneous Networks

Zhiyong Feng, Beijing University of Posts and Telecommunications, China; Jing Zhong, Department of Computer Science, Canada; Wei Li, Victoria University of Wellington, New Zealand; and Aaron Gulliver, University of Victoria, Canada

4 Reinforcement Learning Based Auction Algorithm for Dynamic Spectrum Access in Cognitive Radio Networks

Yinglei Teng, Beijing University of PostsTelecommunications, China; Yong Zhang, Beijing University of PostsTelecommunications, China; Fang Niu, Beijing University of PostsTelecommunications, China; Chao Dai, Beijing University of PostsTelecommunications, China; and Mei Song, Beijing University of Posts and Telecommunications, China

5 Robust Cooperative Nonlinear Transceiver Design in Multi-Party MIMO Cognitive Radio Networks with Stochastic Channel Uncertainty

Ebrahim Avazkonandeh Gharavol, National University of Singapore, Singapore; Ying-Chang Liang, Institute of Infocomm Research, Singapore; and Koen Mouthaan, National University of Singapore, Singapore

Thursday 9 September 2010 16:00-17:30 Provinces II

9C: Spectrum Awareness and Primary User Detection III

Chair: Dusit Niyato, Nanyang Technological University

1 Hierarchical and Adaptive Spectrum Sensing in Cognitive Radio based Multi-hop Cellular Networks

Hongcheng Zhuang, Huawei Technologies Co., Ltd., China; Zezhou Luo, Huawei Technologies Co., Ltd., China; Jietao Zhang, Huawei Technologies Co., Ltd., China; and Halim Yanikomeroglu, Carleton University, Canada

2 On the Detection Time of a Primary Network using Fusion Rules in a Cognitive WLAN Network

David Tung Chong Wong, Institute for Infocomm Research, Singapore; Shoukang Zheng, Institute for Infocomm Research, Singapore; and Ying-Chang Liang, Institute for Infocomm Research, Singapore

3 Modeling Periodic Sensing Errors for Opportunistic Spectrum Access

Pak Kay Tang, Institute for Infocomm Research, Singapore; and Yong Huat Chew, Institute for Infocomm Research, Singapore

4 Beacon transmitter placement effect on aggregate interference and capacity-outage performance in a cognitive radio network

Mahsa Derakhshani, McGill University, Canada; and Tho Le-Ngoc, McGill University, Canada

5 Media Access Scheme in Distributed Spectrum Sensing

Yohannes Alemseged Demessie, National Institute of InformationCommunications Technology (NICT), Japan; Chen Sun, National Institute of InformationCommunications Technology (NICT), Japan; Ha Nguyen Tran, National Institute of InformationCommunications Technology (NICT), Japan; and Hiroshi Harada, National Institute of Information and Communications Technology (NICT), Japan

Thursday 9 September 2010 16:00-17:30 Governor General I

9D: MIMO-OFDM

Chair: Symeon Chatzinotas, University of Luxembourg, Luxembourg

1 Joint Sidelobe and Peak Power Reduction in OFDM-Based Cognitive Radio

Abolfazl Ghassemi, University of British Columbia, Canada; Lutz Lampe, University of British Columbia, Canada; Alireza Attar, University of British Columbia, Canada; and Aaron Gulliver, University of Victoria, Canada

2 Schemes of Power Allocation and Antenna Port Selection in OFDM Distributed Antenna Systems

Lisha Ling, Beijing University of Posts & Telecommunications, China; Tan Wang, Beijing University of Posts & Telecommunications, China; Ying Wang, Beijing University of Posts & Telecommunications, China; and Cong Shi, Beijing University of Posts & Telecommunications, China

3 Low Complexity Near-ML Detection for MIMO-OFDM System

Zhaohui Cai, Institute for Infocomm Research, Singapore; Peng Hui Tan, Institute for Infocomm Research, Singapore; Jianzhong Hao, Institute for Infocomm Research, Singapore; Chin Ming Pang, Institute for Infocomm Research, Singapore; Su Mei Sun, Institute for Infocomm Research, Singapore; and Po Shin Chin, Institute for Infocomm Research, Singapore

4 Non-Cooperative Game for Equal-Gain Beamforming in Multiuser OFDM Systems

Rong-Terng Juang, Industrial Technology Research Institute, Taiwan; Jia-Hao Wu, Industrial Technology Research Institute, Taiwan; Pangan Ting, Industrial Technology Research Institute, Taiwan; Hsin-Piao Lin, National Taipei University of Technology, Taiwan; and Ding-Bing Lin, National Taipei University of Technology, Taiwan

5 A Matrix Scheme to Extrapolation and Interpolation for a 4G MIMO OFDM System

Ashraf Tahat, Princess Sumaya University for Technology, Jordan

Thursday 9 September 2010 16:00-17:30 Governor General II

9E: Channel Estimation II

Chair: Kareem Baddour, CRC

- 1 Joint Blind Channel Estimation and Turbo Equalization for OFDM Systems**
Jing Zhou, Beijing University of PostsTelecommunications, China; Yongyu Chang, Beijing University of PostsTelecommunications, China; Zhe Chen, Beijing University of PostsTelecommunications, China; and Dacheng Yang, Beijing University of Posts and Telecommunications, China
- 2 Low complexity channel estimation for LTE in fast fading environments for implementation on multi-standard platforms**
Farzad Foroughi Abari, Lund University, Sweden; Farnaz Karimdady Sharifabad, Lund University, Sweden; and Ove Edfors, Lund University, Sweden
- 3 MIMO Channel Estimation Using the Variational Expectation-Maximization Method**
Zhengwei Jiang, University of Toronto, Canada; Teng Joon Lim, University of Toronto, Canada; Roya Doostnejad, Redline Communications Inc., Canada; and Taiwen Tang, University of Toronto, Canada
- 4 A Robust Channel Estimation for Broadband OFDM Systems with Virtual Tones**
Weiqing Nie, Beijing University of Posts and Telecommunications, China; Jianhua Zhang, Beijing University of Posts and Telecommunications, China; Yi Liu, Beijing University of Posts and Telecommunications, China; and Feifei Sun, Beijing University of Posts and Telecommunications, China
- 5 Superimposed Pilots Aided Joint CFO and Channel Estimation for ZP-OFDM Modulated Two-Way Relay Networks**
Chintha Tellambura, University of Alberta, Canada; Gongpu Wang, University of Alberta, Canada; and Feifei Gao, Jacobs University, Germany

Thursday 9 September 2010 16:00-17:30 Governor General III

9F: Network Modelling and Evaluation

Chair: Kwan Lawrence Yeung, The University of Hong Kong

- 1 Modeling LTE/UMTS Deployment with Patchy Coverage**
Indra Widjaja, Bell Labs, Alcatel-Lucent, United States; Humberto La Roche, Juniper Networks, United States; and Nuzman Carl, Bell Labs, Alcatel-Lucent, United States
- 2 Performance Evaluation of WiMAX System in Various Morphological Scenarios**
Ashraf Badwai, Intel, Egypt; Wafaa Taie, Intel, Egypt; Ahmed Ibrahim, Intel, Egypt; and Hani Elgebaly, Intel, Egypt
- 3 Group Vertical Handover in Heterogeneous Radio Access Networks**
Lei Sun, Beijing University of PostsTelecommunications, China; Hui Tian, Beijing University of PostsTelecommunications, China; and Zheng Hu, Beijing University of Posts and Telecommunications, China
- 4 GSM Evolution Importance in Re-farming 900 MHz band**
Robson Vieira, Nokia Technology Institute, Brazil; Rafael Paiva, Nokia Technology Institute, Brazil; Jari Hulkkonen, NSN, Finland; Rauli Jarvela, NSN, Finland; Renato Iida, Nokia Technology Institute, Brazil; Mikko Saily, NSN, Finland; Fernando Tavares, Nokia Technology Institute, Brazil; and Kari Niemela, NSN, Finland
- 5 Architectural Analysis of a Smart DMA Controller for Protocol Stack Acceleration in LTE Terminals**
Sebastian Hessel, Ruhr-Universität Bochum, Germany; David Szczesny, Ruhr-Universität Bochum, Germany; Felix Bruns, Ruhr-Universität Bochum, Germany; Attila Bilgic, Ruhr-Universität Bochum, Germany; and Josef Hausner, Infineon Technologies AG, Germany

Thursday 9 September 2010 16:00-17:30 Nunavut

9G: Performance Analysis in Wireless Networks

Chair: Lie-Liang Yang, University of Southampton

- 1 Exact Outage Probability Caused by Multiple Nakagami Interferers with Arbitrary Parameters**
Qiuyan Liu, Beijing Jiaotong University, China; Zhangdui Zhong, Beijing Jiaotong University, China; Bo Ai, Beijing Jiaotong University, China; Miao Wang, Beijing Jiaotong University, China; and Cesar Briso-Rodriguez, Universidad Politecnica de Madrid, Spain
- 2 Performance Comparison of Distributed Cooperative STBC and CDD MC-CDMA multi-hop Relaying Systems**
Laura Guerrero, KCL, United Kingdom; Fatin Said, KCL, United Kingdom; and A. Hamid Aghvami, KCL, United Kingdom
- 3 Performance Sensitivity to Higher Order Moments of Call Interruption and Cell Dwell Times in Cellular Networks**
Andrés Rico-Páez, CINVESTAV-IPN, Mexico; Felipe_Alejandro Cruz-Pérez, CINVESTAV-IPN, Mexico; and Genaro Hernández-Valdez, Universidad Autónoma Metropolitana, Mexico
- 4 Throughput Analysis of General Network Coding Nodes Based on SW-ARQ Transmission**
Yang Qin, University of Southampton, United Kingdom; and Lie-Liang Yang, University of Southampton, United Kingdom
- 5 Admission Control Scheme for Voice Calls Guaranteeing Both Packet-level QoS and Call-level QoS in IEEE 802.16e**
Yun Han Bae, Korea University, Korea, Republic of; Jin Soo Park, Korea Telecom, Korea, Republic of; and Bong Dae Choi, Korea University, Korea, Republic of

Thursday 9 September 2010 16:00-17:30 Nova Scotia

9H: Femtocell Network/Multicell Cooperation

Chair: Phone Lin, National Taiwan University

- 1 A Study for Location Update Cost in a Femtocell Network**
Shin-Neng Wang, National Taiwan University, Taiwan; Phone Lin, National Taiwan University, Taiwan; Chai-Hien Gan, Industrial Technology Research Institute, Taiwan; and Huai-Lei Fu, National Taiwan University, Taiwan
- 2 Interference Mitigation based on Femtocells Grouping in Low Duty Operation**
Helena Widiarti, KAIST, South Korea; Sung-Yeop Pyun, KAIST, South Korea; and Dong-Ho Cho, KAIST, South Korea
- 3 Cognitive Optimization Scheme of Coverage for Femtocell using Multi-element Antenna**
Yizhe Li, Beijing University of Posts and Telecommunications, China; Zhiyong Feng, Beijing University of Posts and Telecommunications, China; Qixun Zhang, Beijing University of Posts and Telecommunications, China; Li Tan, Beijing University of Posts and Telecommunications, China; and Fang Tian, Beijing University of Posts and Telecommunications, China
- 4 Clustering Approach in Coordinated Multi-Point Transmission/Reception System**
Fan Huang, Beijing University of PostsTelecommunications, China; Yafeng Wang, Beijing University of PostsTelecommunications, China; Jian Geng, Beijing University of PostsTelecommunications, China; Mei Wu, Beijing University of PostsTelecommunications, China; and Dacheng Yang, Beijing University of Posts and Telecommunications, China
- 5 Imperfect Radio Over Fibre Aided DistributedAntennas with Fractional Frequency Reuse**
Xinyi Xu, University of Southampton, United Kingdom; Rong Zhang, University of Southampton, United Kingdom; and Lajos Hanzo, University of Southampton, United Kingdom

Thursday 9 September 2010 16:00-17:30 Alberta

9I: Mobile Communications

Chair: David Lee, Cisco, USA

- 1 Enhanced Lee Model from Rough Terrain Sampling Data Aspect**
David Lee, Cisco, United States, and William C. Y. Lee, Beijing University, China
- 2 Linear Filter Design for Multi-User MIMO-Relay Downlink Systems with User Selection**
Feng Gong, Beijing University of Posts and Telecommunications, China; Ying Wang, Beijing University of Posts and Telecommunications, China; Gen Li, Beijing University of Posts and Telecommunications, China; and Tong Wu, Beijing University of Posts and Telecommunications, China
- 3 The Impact of Fading on the Outage Probability in Cognitive Radio Networks**
Yaobin Wen, University of Ottawa, Canada; Sergey Loyka, University of Ottawa, Canada; and Abbas Yongacoglu, University of Ottawa, Canada
- 4 Joint Power Allocation and Best-relay Positioning for Incremental Selection Amplify-and-Forward Relaying**
Jie Ran, Beijing University of Posts and Telecommunications, China; Yafeng WANG, Beijing University of Posts and Telecommunications, China; Chang LI, Beijing University of Posts and Telecommunications, China; Dacheng YANG, Beijing University of Posts and Telecommunications, China; and Wei Xiang, University of Southern Queensland, Australia
- 5 A Cooperative Spectrum Sensing Scheme Based on Linear PAC in Cognitive Radio Networks**
Zhong Chen, Tsinghua University, China; and Xianda Zhang, Tsinghua University, China

Thursday 9 September 2010 16:00-17:30 Confederation

9P: Antennas and Propagation Posters

- 1 Estimation of Base Stations Exclusion Zones**
Daniel Sebastiao, IT/IST-TUL, Portugal; Diana Ladeira, IT/IST-TUL, Portugal; Monica Branco, IT/IST-TUL, Portugal; Carla Oliveira, IT/IST-TUL, Portugal; and Luis M. Correia, IT/IST-TUL, Portugal
- 2 Effect of Cluster Size Selection on the Throughput of Multi-hop Cooperative Relay**
Sam Vakil, University of Toronto, Canada; Min Dong, University of Ontario Institute of Technology, Canada; and Ben Liang, University of Toronto, Canada

- 3 Interference Aware Relay Assignment Schemes For Multiuser Cognitive Radio Systems**
Muhammad Naeem, Simon Fraser University, Canada; Udit Pareek, Simon Fraser University, Canada; and Daniel Lee, Simon Fraser University, Canada
- 4 Introduction to the Absolute Phase in Mobile Channels**
Jinyun Ren, Simon Fraser University, Canada; and Rodney Vaughan, Simon Fraser University, Canada
- 5 Applicability of game engine for ray tracing techniques in a complex urban environment**
Andres Navarro Cadavid, Universidad Icesi, Colombia; and Dinael Guevara, Universidad Francisco de Paula Santander, Colombia
- 6 Characterization of Impedance Variations in antennas for TETRA terminals**
Pedro Luis Carro Ceballos, University of Zaragoza, Spain; Jesus de Mingo, University of Zaragoza, Spain; and Paloma Garcia-Ducar, University of Zaragoza, Spain
- 7 On the Accuracy of Channel Modeling based on the Kronecker Product**
Vahid Pourahmadi, University of Waterloo, Canada; Farzaneh Kohandani, Research In Motion (RIM) Limited, Canada; and Amin Mobasher, Research In Motion (RIM) Limited, Canada
- 8 Longley-Rice and ITU-P.1546 Combined; A New International Terrain-Specific Propagation Model**
Sidney Shumate, Givens & Bell, Inc., United States
- 9 Range and Bearing Estimation for Near-Field Sources**
Nizar Tayem, Prince mohammad bin fahd university, Saudi Arabia; Champike attanaayake, Miami University, United States; and Ayodele Abatan, Miami University, United States
- 10 Cauchy Power Azimuth Spectrum for Clustered Radio Propagation MIMO Channel Model**
Xin Li, NTNU, Norway; and Torbjorn Ekman, NTNU, Norway
- 11 CDMA 1xEVDO System with Smart Antenna Array**
Josefina Castañeda-Camacho, Benemérita Universidad Autónoma de Puebla, Mexico; Mauricio Carro, Benemérita Universidad Autónoma de Puebla, Mexico; Domingo Lara-Rodríguez, CINVESTAV-IPN, Mexico; and Honorato Azucena, Benemérita Universidad Autónoma de Puebla, Mexico

Digital Mobile Multimedia Transmission Technology and System (DMMTTS)

Chairs:

Jian Song, Jintao Wang, Tsinghua University, Beijing, China

Monday 6 September 2010 9:00-10:30 Quebec

Session 1

- 1 Invited Talk**
Yiyan Wu, Communications Research Centre Canada, Editor-in-Chief of IEEE Transactions on Broadcasting
- 2 Technical Review for Chinese Future DTTB System (Invite Paper)**
Zhixing Yang, Department of Electronic Engineering, Tsinghua University, Beijing, P. R. China, China; Jun Wang, Department of Electronic Engineering, Tsinghua University, Beijing, P. R. China, China; Jintao Wang, Department of Electronic Engineering, Tsinghua University, Beijing, P. R. China, China; Kewu Peng, Tsinghua National Laboratory of Information Science Technology, China; Fang Yang, Tsinghua National Laboratory of Information Science Technology, China; Jian Song, Tsinghua National Laboratory of Information Science Technology, China; and

Zhaocheng Wang, Department of Electronic Engineering, Tsinghua University, Beijing, P. R. China, China

Coffee Break in Provences Foyer (10.30 – 11.00)

Monday 6 September 2010 11:00-12:30 Quebec

Session 2

- 3 Progressive Automatic Detection of OFDM System Parameters for Universal Mobile DTV Receiver**
Qian Chen, University of Western Ontario, Canada; Xianbin Wang, University of Western Ontario, Canada; Paul Ho, Simon Fraser University, United States; and Yiyan Wu, Communications Research Centre Canada, Canada
- 4 New Constellation-Rotation Diversity Scheme for DVB-NGH**
Junho Kim, Chonnam National University, Korea, Republic of; Hojun Kim, Chonnam National University, Korea, Republic of; Taejin Jung, Chonnam National University, Korea, Republic of; Jaehwui Bae, ETRI, Korea, Republic of; and Gwangsoon Lee, ETRI, Korea, Republic of

5 Low Complexity Iterative Frequency Domain Decision Feedback Equalization

Chao Zhang, Tsinghua University, China; and Changyong Pan, Tsinghua University, China

Lunch on your own (12.30 – 13.30)

Monday 6 September 2010 13:30-15:00 Quebec

Session 3

6 An Improved CIR-based STR Scheme for MISO mode in DVB-T2 System

Seunghwan Choi, Yonsei University, Korea, Republic of; Jong-Seob Baek, Yonsei University, Korea, Republic of; and Jong-Soo Seo, Yonsei University, Korea, Republic of

7 Analysis on Polynomials Employed in Pre-distortion for Power Amplifiers

Ai Bo, Beijing Jiaotong University, China; Zhong Zhang-dui, Beijing Jiaotong University, China; Jiang Tao, HuaZhong University of Science and Technology, China; and Li Bo, Xi'an University of Posts and Telecommunications, China

8 Novel Multi-Service Datacasting Scheme overDTMB System

Xiaoqing Wang, Tsinghua University, China; Shigang Tang, Hong Kong Applied Science & Technology Research Institute, China; Yangang Li, Hong Kong Applied Science & Technology Research Institute, China; and Shuyun Jia, Tsinghua University, China

Green Wireless Communications and Networks Workshop (GreeNet)

GreeNet Co-Chairs:

Yong Sun, Toshiba Research Europe Ltd., UK

Witold A. Krzymieñ, University of Alberta, Canada

Ngoc-Dung Dao, Toshiba Research Europe Ltd., UK

Yuefeng (Peter) Zhou, Huawei Technologies Co., Ltd., UK

Monday 6 September 2010 9:00-10:30 Provinces II

Session 1

Chair: Witold Krzymieñ

1 Keynote Address

Reinaldo Valenzuela, Alcatel-Lucent Bell Labs, USA

2 Keynote Address

Takeshi Origuchi, NTT, Japan

Coffee Break in Provinces Foyer (10.30 – 11.00)

Monday 6 September 2010 11:00-12:30 Provinces II

Session 2

Chair: Ngoc Dao

1 Enablers for Energy Efficient Wireless Networks

Auer Gunther, DOCOMO Euro-Labs, Germany; István Gódor, Ericsson Research, Hungary; László Hévízi, Ericsson Research, Hungary; Muhammad Imran, CCSR University of Surrey, United Kingdom; Jens Malmodin, Ericsson Radio Systems, Sweden; Péter Fazekas, Budapest University of TechnologyEconomics, Hungary; Gergely Biczók, Budapest University of TechnologyEconomics, Hungary; Hauke Holtkamp, DOCOMO Euro-Labs, Germany; Dietrich Zeller, Alcatel-Lucent, Germany; Oliver Blume, Alcatel-Lucent, Germany; and Rahim Tafazolli, CCSR University of Surrey, United Kingdom

2 Energy Efficiency of Heterogeneous Cellular Network

Wei Wang, Alcatel-Lucent Shanghai Bell, China; and Gang Shen, Alcatel-Lucent Shanghai Bell, China

3 Power Efficient Dynamic Resource Scheduling Algorithms for LTE

Congzheng Han, University of Bristol, United Kingdom; Kian Chung Beh, University of Bristol, United Kingdom; Marios Nicolaou, University of Bristol, United Kingdom; Simon Armour, University of Bristol, United Kingdom; and Angela Doufexi, University of Bristol, United Kingdom

4 Green Power Amplification Systems for 3G+ Wireless Communication Infrastructure

Oualid Hammi, King Fahd University of PetroleumMinerals, Saudi Arabia; Andrew Kwan, University of Calgary, Canada; Mohamed Helaoui, University of Calgary, Canada; and Fadhel Ghannouchi, University of Calgary, Canada

Lunch on your own (12.30 – 13.30)

Monday 6 September 2010 13:30-15:00 Provinces II

Session 3

Chair: Witold Krzymieñ

1 Inter-Cell Interference Reduction via Store Carry and Forward Relaying

Panayiotis Kolios, Centre for Telecommunications Research, United Kingdom; Vasilis Friderikos, Centre for Telecommunications Research, United Kingdom; and Katerina Papadaki, Group of Operational Research, United Kingdom

2 On the Energy Consumption of Relay Networks

Andre Brandao, Communications Research Centre, Canada

3 Energy Efficient Antenna Deployment Design Scheme in Distributed Antenna Systems

Tiankui Zhang, Beijing University of Posts and Telecommunications, China; Congqing Zhang, Beijing University of Posts and Telecommunications, China; Laurie Cuthbert, Queen Mary, University of London, United Kingdom; and Yue Chen, Queen Mary, University of London, United Kingdom

4 Improving Energy Efficiency through Bandwidth, Power, and Adaptive Modulation

Shunqing Zhang, Huawei Technologies Co. Ltd., China; Yan CHEN, Huawei Technologies Co. Ltd., China; and Shugong XU, Huawei Technologies Co. Ltd., China

5 TOU-Aware Energy Management and Wireless Sensor Networks for Reducing Peak Load in Smart Grids

Melike Erol-Kantarci, University of Ottawa, Canada; and Hussein Mouftah, University of Ottawa, Canada

6 Opportunistic Relay Selection in Future Green Multihop Cellular Networks

Lei Hong, Nanyang Technological Univ, Singapore; Xiao Fan Wang, Nanyang Technological Univ, Singapore; and Peter Han Joo Chong, Nanyang Technological Univ, Singapore

Coffee Break in Provinces Foyer (15.00 – 15.30)

Monday 6 September 2010 11:00-12:30 Provinces II

Session 4

Chair: Witold Krzymieñ

1 Keynote Address

Gerhard P. Fettweis, Dresden University of Technology, Germany

2 Green Wireless Communications Panel

Vehicle Electronics (VE2010)

Chairs:

Mehrdad (Mark) Ehsani, Texas A&M University, USA

Chris Mi, University of Michigan - Dearborn, USA

Jay Iyengar, Chrysler Group LLC, USA

Monday 6 September 2010 13:30-15:00 Provinces I

Session 1

1 Analysis and Simulation of Adjacent Service Interference to Vehicle-Equipped Digital Wireless Receivers from Cellular Mobile Terminals

Theodore Rappaport, The University of Texas at Austin, United States; Stefano DiPierro, Sirius XM Satellite Radio Inc., United States; and Riza Akturan, Sirius XM Satellite Radio Inc., United States

2 Battery Fast Charging Strategy Based on Model Predictive Control

Jingyu Yan, The Chinese University of Hong Kong, Hong Kong; Guoqing Xu, Shenzhen Institutes of Advanced Technology, China; Huihuan Qian, The Chinese University of Hong Kong, Hong Kong; and Yangsheng Xu, The Chinese University of Hong Kong, Hong Kong

3 Direct Torque Control for Electric Vehicle driver Motor Based on Extended Kalman Filter

Zhongbo Peng, Chongqing Jiaotong University, China

Monday 6 September 2010 15:30-17:00 Provinces I

Session 2

4 Distributed filtering over sensor networks for autonomous navigation of UAVs

Gerasimos Rigatos, Industrial Systems Institute, Greece

5 Effects of Using Ultracapacitors on Acceleration and Regenerative Braking Performances in Hybrid Electric Vehicles

Amir Hossein Eghbali, University of Tehran, Iran, Islamic Republic of; and Behzad Asaei, University of Tehran, Iran, Islamic Republic of

6 Fuzzy Control for Battery Equalization Based on State of Charge

Jingyu Yan, The Chinese University of Hong Kong, Hong Kong; Zhu Cheng, Shenzhen Institutes of Advanced Technology, China; Guoqing Xu, Shenzhen Institutes of Advanced Technology, China; Huihuan Qian, The Chinese University of Hong Kong, Hong Kong; and Yangsheng Xu, The Chinese University of Hong Kong, Hong Kong

Tutorials

A range of tutorials will be held throughout the conference given by experts from industry and academia.

Monday 6 September 2010 09:00-12:30

T1: Wireless Broadband in 2020: Looking through the IMT-Advanced Eyehole

Abd-Elhamid M & Najah Abu Ali, Queen's University

IMT-Advanced is justly identified as realizing substantial performance gains over previous generation of wireless networks. By October 2010, the ITU-R will decide on the framework and key characteristics by which the IMT-Advanced candidates will be judged and, accordingly, recognized as satisfying ITU's requirements. With this in mind, it is natural to contemplate on the future of wireless broadband beyond IMT-Advanced. The objective of this tutorial is hence to provide a sober and cautious projection of how wireless broadband will progress over the next ten years. This projection is based on a mindful scan of current trends and advances at several operational levels (interface, networking and services) and in different directions (market and regulatory). In order to facilitate this projection, we offer a primer on IMT-Advanced candidate technologies, namely 3GPP's LTE-Advanced and IEEE's 802.16m. In doing so, the tutorial will establish the general motivation and identify the enabling technologies for IMT-Advanced networks. It will then offer a detailed description of the each technology, taking a functionality-based view of their individual operation that facilitates a meaningful comparison between the technologies. We will then build on this primer to elaborate on the considerations dictating the vision for wireless broadband in 2020.

Abd-Elhamid M. Taha received his B.Sc. and M.Sc. in Electrical Engineering from Kuwait University, Kuwait in 1999 and 2002, and his Ph.D. from the Department of Electrical and Computer Engineering of Queen's University, Canada in September 2007. He is currently a Research Associate at the School of Computing, Queen's University. Dr. Taha has authored several publications including journals, refereed conference papers, and book chapters. He also served as a technical program committee in several international conferences and symposia, and is the co-chair of the 2010 IEEE Workshop on Wireless Local Networks. His areas of interest include radio resource management in wireless and mobile networks, especially in the context of wireless overlays with heterogeneous access and wireless relay networks. Dr. Taha has presented two tutorials before at flagship IEEE conferences including IEEE GCC 2009 and Globecom 2009. Najah Abu Ali received her B.S. and M.S. degrees in Electrical Engineering in 1989 and 1995 respectively from University of Jordan, Amman, Jordan and her PhD degree in 2006 in Computer Networks in Electrical Engineering department at Queen's University, Kingston, Canada. She joined the College of Information Technology, United Arab Emirates University (Al Ain, UAE), as an Assistant Professor with the Computer Networks Engineering track. Her research interests comprise analytical and measurement based network performance management and Quality of Service and resource management of single and multihop wireless networks. Dr. Abu Ali is

an expert on the design, QoS provisioning and performance of wireless broadband, and has published extensively in the area. She delivered several tutorials before including an overview of IEEE 802.16/WiMAX at CCNC 2009, and another on IMT-Advanced standardization and technologies at Globecom 2009. Both instructors are currently coauthoring a book entitled "LTE, WiMax and the Race towards wireless broadband services" for John and Wiley and Sons, forthcoming October 2010.

Monday 6 September 2010 09:00-12:30

T3: Cooperative Vehicle Safety Systems Enabled by Wireless Networks

Yaser P. Fallah, Denis Gingras, Hariharan Krishan, David Michelson, Shahrokh Valaee, Soumaya Cherkaoui

The main goal of this tutorial is to close the gap between academic and industrial research on cooperative vehicle safety (CVS) systems. The tutorial will cover a wide spectrum of system design issues concerning cooperative communication for vehicle safety applications. The following subjects are addressed: 1) Overview of recently developed standards for medium access and vehicular communication (IEEE protocol suites) 2) Design and Development of V2V Safety Applications 3) Communication control methods to improve vehicle tracking accuracy in CVS 4) Enhanced medium access methods for vehicle or data prioritization in emergency situations 5) robust and collaborative vehicle positioning methods for safety applications. The attendees will learn about the existing standards and standard compliant methods to improve CVS performance, in addition to an overview of proposals for improving the standard for CVS purposes.

Shahrokh Valaee is with the Dept. of Electrical and Computer Engineering, University of Toronto and holds the Nortel Institute Jr Chair of Communication Networks. Prof. Valaee is an Editor of IEEE Transactions on Wireless Communications and the Co-Chair of IEEE PIMRC 2011. His current research interests are in wireless vehicular and sensor networks, location estimation and cellular networks. Hariharan Krishnan received his Ph.D. from the University of Michigan. Currently, he is the thrust area lead on the GM research program on V2V and V2I communications. He works on various V2X communication research topics, including the Vehicle Safety Communications. Previously, he was an assistant professor at the National University of Singapore (1993-2000). He serves as an Associate Editor for the IEEE Control System Society and Transportation Research-Part C. David G. Michelson is with the Dept. of Electrical and Computer Engineering at the University of British Columbia where he leads the Radio Science Lab. Prof. Michelson is Chair of the IEEE VT-S Propagation Committee and an Editor of IEEE Trans. on Wireless Communications. His current research interests are propagation and channel

modelling in vehicular, body area, industrial and fixed wireless environments. Yaser P. Fallah is with the Institute of Transportation Studies, University of California at Berkeley (EECS and CEE Departments). His current research activities are in the areas of networked cyber physical systems and vehicular wireless networking. He obtained his Ph.D. from the University of British Columbia in 2007. Prior to his PhD studies, Dr. Fallah was with IBM Canada. Soumaya Cherkaoui is a Professor of Electrical & Computer Engineering at Université de Sherbrooke and an adjunct professor at Lulea University, Sweden. She leads two projects on Vehicles Communications and Applications within the Canadian AUTO21 NCE and is the Co-Chair of IEEE-ON MOVE 2010. Her research interests are in wireless ad-hoc and sensor networks, V2V and V2I communications, QoS, and Security provisioning. Denis Gingras is a professor of Electrical Engineering and Computer Science at Université de Sherbrooke, Canada. He obtained his Dr. Eng. from Ruhr-Universität Bochum, Germany. His research interests cover fields in signal processing, uncertainty modeling, multi-sensor fusion, information theory and intelligent systems. He is also head of a research program on intelligent systems and sensors in the Canadian AUTO21 NCE

Monday 6 September 2010 09:00-12:30

T4: Vehicular Ad Hoc Networks and Integrated Intelligent Transportation Systems

Ivan Stojmenovic, University of Ottawa

This tutorial first reviews the components and algorithmic challenges of intelligent transportation systems: dynamic route selection, environmentally friendly driving, dynamic traffic light scheduling problem, reconfiguration of road network and traffic admission control, congestion modeling and forecast, and effective incentive and enforcement policies. ITS also includes vehicle-to-vehicle communication, with associated problems such as geocasting for congestion notification, vehicle to vehicle routing, and enabling application services for user devices. State of the art protocols for automotive networking and communication are described. This tutorial then elaborates on recent vehicle-to-vehicle communication protocols, with the emphasis on protocols addressing intermittent connectivity of vehicular ad hoc networks (VANET). Data dissemination enables congestion notification (among others) and is based on tasks such as diffusion and broadcasting to a region (geocasting), which rely on single-hop and multi-hop inter-vehicle communications, respectively. Vehicle to vehicle routing enables application services for user devices via multi-hopping to roadside units, and direct communication among vehicles. Common issues in VANET routing are discussed.

Ivan Stojmenovic received his Ph.D. degree in mathematics. He held regular and visiting positions in Serbia, Japan, USA, Canada, France, Mexico, Spain, UK (as Chair in Applied Computing at the University

of Birmingham), Hong Kong, Brazil, and Taiwan, and is Full Professor the University of Ottawa, Canada. He published over 250 different papers, and edited five books on wireless, ad hoc, sensor and actuator networks and applied algorithms with Wiley. He is editor of over dozen journals, editor-in-chief of *IEEE Transactions on Parallel and Distributed Systems* (from January 2010), and founder and editor-in-chief of three journals (*MVLSC*, *IJPEDS* and *AHSWN*). Stojmenovic has h-index 35 and >5000 citations. He received three best paper awards and the Fast Breaking Paper for October 2003, by Thomson ISI ESI. He is recipient of the Royal Society Research Merit Award, UK. He is elected to IEEE Fellow status (Communications Society, class 2008), and is IEEE CS Distinguished Visitor 2010-12. He received Excellence in Research Award of the University of Ottawa 2009. Stojmenovic chaired and/or organized >50 workshops and conferences, and served in over 100 program committees. He was program co/vice-chair at IEEE PIMRC 2008, IEEE AINA-07, IEEE MASS-04&07, EUC-05&08, WONS-05, MSN-05&06, ISPA-05&07, founded workshop series at IEEE MASS, ICDCS, DCOSS, ACM Mobihoc, MSN, and was Workshop Chair at IEEE MASS-09, ACM Mobihoc-07&08. He has presented over a dozen tutorials.

Monday 6 September 2010 13:30-17:00

T5: Enabling Mobile Video Services over WiMAX and LTE

Ozgur Oyman, Intel Labs

Wireless networks are on the verge of a third phase of growth. The first phase was dominated by voice traffic, and the second phase, which we are currently in, is dominated by data traffic. In the third phase, we predict that the traffic will be dominated by video and will require new ways to optimize the network to prevent saturation. This increase in video traffic is one of the key drivers of the evolution to new mobile broadband standards like WiMAX 802.16m and 3G LTE and LTE Advanced, motivating the need for enhancing the video service capabilities of future cellular and mobile broadband systems. Therefore, it is important to understand both the potential and limitations of these networks for delivering video content in the future, which will include more than the traditional video broadcasts, but also video streaming and uploading in the uplink direction. In that vein, this tutorial will provide an overview of technology options for enabling broadcast and unicast video services over WiMAX and LTE networks, review related standardization activities and present new techniques which could be exploited to further enhance the video capacity and quality of user experience. Finally, we will address some of the promising longer term research vectors for enhancing video service capabilities over mobile broadband, such as cross-layer design, joint source-channel coding and distortion-aware link adaptation and resource allocation, and discuss related future technical challenges.

Dr. Ozgur Oyman received the B.S. (summa cum laude) degree in electrical engineering from Cornell University, Ithaca, NY, in 2000, and the M.S. and Ph.D. degrees in electrical engineering from Stanford University, Stanford, CA, in 2002 and 2005, respectively. Since September 2005, he has been a senior research scientist at Intel Labs, Santa Clara, CA, U.S.A. Dr. Oyman's research broadly investigates wireless communications and networking, with special emphasis on cross-layer (PHY/MAC/APP) design and system-level optimization for cellular and mobile broadband wireless systems, heterogeneous multihop/mesh/adhoc communication architectures and multimedia/video transmission. He is author or co-author on over 45 technical publications, and has filed over 20 patent applications. He was a key contributor to Intel's IP portfolio on multihop/mesh/adhoc networking technologies, inventing several multihop relaying and cooperative transmission techniques that have been adopted by the IEEE 802.16 standards. He was a Stanford Graduate Fellow during his studies at the Information Systems Laboratory as a member of the Smart Antennas Research Group. His prior industry experience includes work at Qualcomm (2001), Beceem Communications (2004) and Intel (2005). Dr. Oyman received Best Paper Awards from the 2007 IEEE Global Telecommunications Conference (GLOBECOM), the 2008 Cognitive Radio Oriented Wireless Networks and Communications Conference (CROWNCOM) and the 2008 IEEE International Symposium on Spread Spectrum Techniques and Applications (ISSSTA). He was the recipient of Intel Lab's Divisional Recognition Award for his contributions to research and standardization of multihop relaying techniques for next-generation WiMAX systems. He has served on the technical program committees of over 25 international conferences and workshops, and on the organizing committees of WCNC 2009 (TPC co-chair for NET track) and CROWNCOM 2009 (publicity chair). He also served as a guest editor for the *EURASIP Journal on Wireless Communications and Networking*, Special Issue on Femtocell Networks. He received a Certificate of Appreciation from the IEEE Communications Society in 2009 for his outstanding service. He is a member of Tau Beta Pi, Eta Kappa Nu and the IEEE.

Monday 6 September 2010 13:30-17:00

T7: Cooperative Communications

Lajos Hanzo, University of Southampton

This tutorial introduces the principles of cooperative communication, commencing with the introduction of four basic MIMO types, namely: 1. Beam-forming; 2. Space-time coding; 3. Spatial Division Multiplexing; and 4. Spatial Division Multiple Access.

Their limitations are highlighted and it is shown, how the single-antenna-aided cooperative mobile may circumvent these limitations. The corresponding amplify-forward and decode-forward protocols as well as their hybrids are studied. Sophisticated multi-stage iterative channel coding schemes are proposed and it

is argued that in the absence of accurate channel information at the relays the best way forward might be to use multiple-symbol differential detection. EXIT-chart-aided designs are used for creating near-capacity solutions. Finally, a range of future research directions as well as open problems are formulated.

Lajos Hanzo (<http://www-mobile.ecs.soton.ac.uk>) FREng, FIEEE, FIET, DSc received his degree in electronics in 1976 and his doctorate in 1983. During his 34-year career in telecommunications he has held various research and academic posts in Hungary, Germany and the UK. Since 1986 he has been with the School of Electronics and Computer Science, University of Southampton, UK, where he holds the chair in telecommunications. He has co-authored 19 books on mobile radio communications totalling in excess of 10 000, published 850 research papers and book chapters at IEEE Xplore, acted as TPC Chair of IEEE conferences, presented keynote lectures and been awarded a number of distinctions. Currently he is directing an academic research team, working on a range of research projects in the field of wireless multimedia communications sponsored by industry, the Engineering and Physical Sciences Research Council (EPSRC) UK, the European IST Programme and the Mobile Virtual Centre of Excellence (VCE), UK. He is an enthusiastic supporter of industrial and academic liaison and he offers a range of industrial courses. He is also an IEEE Distinguished Lecturer as well as a Governor of both the IEEE ComSoc and the VTS. He is the Editor-in-Chief of the IEEE Press and also a Chaired Prof. at Tsinghua University, Beijing. For further information on research in progress and associated publications please refer to <http://www-mobile.ecs.soton.ac.uk>

Monday 6 September 2010 13:30-17:00

T8: QoS Provisioning in Intelligent Vehicular Networks

Xi Zhang, Texas A&M University

Intelligent vehicular networks, which aim at enabling the driving-environment awareness, improving the transportation safety systems, and supporting Quality of Service (QoS) networking services among moving vehicles, are the cornerstone of the next-generation Intelligent Transportation Systems (ITS). High mobility of vehicles and unreliable time-varying wireless channels make the implementation of intelligence and QoS provisionings in vehicular networks significantly challenging. In this tutorial, we will address the key issues and challenges, as well as the state-of-the-art theories and techniques for the intelligent vehicular networks. In particular, we start with introducing the concept of ITS and its engineering applications. We then discuss the QoS-driven intelligent vehicular networks including the vehicle-to-vehicle networks and vehicle-to-infrastructure networks. The current state-of-the-art research status in the intelligent vehicular networks,

such as DSRC, IEEE 802.11p, and Wireless Access in Vehicular Environments (WAVE), driving-environment-aware clustering-based vehicular networks will be studied. Finally, we will focus on the emerging drive-thru Internet networks that provide the QoS-guaranteed Internet access opportunities to the moving vehicles on the road in a manner of "on the go" and their modeling techniques and performance analyses.

Xi Zhang received the Ph.D. degree in electrical engineering and computer science (Electrical Engineering-Systems) from The University of Michigan, Ann Arbor. Prof. Zhang is currently an Associate Professor and the Founding Director of the Networking and Information Systems Laboratory, Department of Electrical and Computer Engineering, Texas A&M University. He was with the Networks and Distributed Systems Research Department, AT&T Bell Laboratories, Murray Hills, NJ, and with AT&T Laboratories Research, Florham Park, NJ, in 1997. He has published more than 170 research papers. Prof. Zhang received the U.S. National Science Foundation CAREER Award in 2004 for his research in the areas of mobile wireless and multicast networking and systems. He received the Best Paper Awards in the IEEE Globecom 2009 and the IEEE Globecom 2007, respectively. He also received the TEES Select Young Faculty Award for Excellence in Research Performance from Texas A&M University in 2006. In addition, he received the Best Teaching Award from University of Technology, Sydney, Australia, in 1989, and the Excellent Teaching Awards twice from Beijing Information Technology Engineering Institute, China, in 1986 and 1987. He is currently serving as an Editor for the IEEE Transactions on Communications, an Editor for the IEEE Transactions on Wireless Communications, an Associate Editor for the IEEE Transactions on Vehicular Technology, a Guest Editor for the IEEE Journal on Selected Areas in Communications for the special issue on "Wireless Video Transmissions", an Associate Editor for the IEEE Communications Letters, and also a Guest Editor for the IEEE Wireless Communications Magazine for the special issue on "Next Generation of CDMA versus OFDMA for 4G Wireless Applications". Prof. Zhang is serving or has served as the Technical Program (TPC) Chair for IEEE Globecom 2011, TPC Vice-Chair for IEEE INFOCOM 2010, TPC Co-Chair for IEEE INFOCOM 2009 Mini-Conference, TPC Co-Chair for IEEE Globecom 2008 - Wireless Communications Symposium, and TPC Co-Chair for the IEEE ICC 2008 - Information and Network Security Symposium. He has served as the TPC members for more than 70 IEEE/ACM leading conferences, including IEEE INFOCOM, IEEE Globecom, IEEE ICC, IEEE WCNC, IEEE VTC, IEEE/ACM QShine, IEEE WoWMoM, IEEE ICCN, etc. Prof. Zhang is a Senior Member of the IEEE Communications Society (since 1998).

Call for Papers



CAPS2011

Fourth Workshop on Context Awareness for Proactive Systems 15–16 May 2011, Budapest, Hungary

Following CAPS2005, 06 and 07, the fourth Workshop on Context Awareness for Proactive Systems will be held in conjunction with IEEE VTC2011-Spring in Budapest, Hungary.

Proactive computing and communication systems are connected to the physical world by means of sensors and actuators which are used to both measure and manipulate the physical surroundings. The gathered environmental data serve proactive systems as stimuli to which they respond in terms of providing users with appropriate resources, information, and services.

In order to fulfil this task, proactive systems need to and benefit from taking users' contexts into account, i.e. using the gathered sensor data to infer users'

state, activities, goals, and so on and to adjust their proactive behaviour accordingly. In addition, mobile and pervasive environments have turned out to be a promising application area for proactive systems. Deploying proactive systems in such rapidly changing environments enforces the need to make them context-aware.

Context awareness in proactive systems opens up a lot of novel opportunities, however, it also poses new challenges upon proactive computing technology. The major objective of the workshop is to study and explore these challenges and proposed ways of meeting them. This includes research on modelling and representing context in proactive computing systems, frameworks and architectures for context handling, sensor and actuator management, context reasoning, learning, and prediction as well as on modelling, recognising and fulfilling user demand.

Papers on following (but not limited to) are invited:

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 - Frameworks and architectures for context-aware systems
 - User demand recognition and modelling
 - User demand recognition and modelling
- Context reasoning
- Sensor and actuator management
- Context modelling and representation
- Context learning and prediction techniques
- Context-based resource, information, and service provisioning
- Infrastructures for proactive systems
- Context aware applications

Submission of full papers 8 November 2010
Notification of acceptance 15 January 2011
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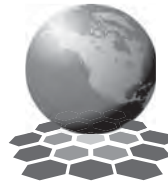
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