

Final Program

2008 IEEE International Conference on Communications (ICC2008)

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Beijing International Convention Center (BICC)

Beijing, China

<http://www.ieee-icc.org/2008>

Hosted by **IEEE Communications Society**

IEEE Communications Society Beijing Section

Organized by **Chinese Institute of Electronics (CIE)**

Chinese Institute of Communications (CIC)

Tsinghua University (THU)

Beijing University of Posts and Telecommunications (BUPT)

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Beijing Municipal Government, China

Natural Science Foundation of China (NSFC)

WELCOME MESSAGE FROM THE GENERAL CHAIR

On behalf of the Executive Committee, it is with great pleasure that I welcome you to Beijing, China and the IEEE International Conference on Communications (ICC 2008), 19-23 May 2008. This will be an historical event for the IEEE Communications Society not only because China is currently experiencing a huge economic expansion, but also because this is the first ever IEEE ComSoc event being held in Beijing and it is also preceding the Beijing Olympic Games. The theme "*Communications: Faster-Higher-Stronger*", will provide an open platform for information exchange and discussion on topics related to major advances in telecommunications.

IEEE ICC 2008 is jointly organized by the Chinese Institute of Electronics, Chinese Institute of Communications, Tsinghua University, and Beijing University of Posts and Telecommunications, under the support of the Ministry of Information Industry of China, Beijing Municipal Government, National Science Foundation of China, and major telecommunication operators. The technical program will consist of 10 technical symposia disseminating the latest research and development results in the areas of telecommunications, tutorials and workshops on the latest business issues in communications and networking topics, and panel sessions for interactive discussions.

China is one of the oldest civilizations known to man. Since the implementation of an open policy in 1978 and enrollment of the WTO in 2002, China continues to grow at an alarming rate. The telecommunications industry and related research and development activities are also expanding its reach globally. Today, the Chinese telecommunications industry is serving over 367 million PSTN terminals with more than 556 million mobile users. Beijing, the capital city, is traditional yet a modern city attracting millions of visitors annually. Having the Olympics in Beijing has insured that the social infrastructure and environment is ready for world class events.

I invite you to join with us by attending the technical and the social events at IEEE ICC 2008 while enjoying the sights and sounds of this unforgettable and magnificent city. This is also an excellent opportunity to bring your family along for pre-conference and post-conference tours in a region that has many world-class tourist destinations.

Once again, welcome to Beijing and enjoy IEEE ICC 2008!



Jichuan Wu

WELCOME MESSAGE FROM THE TPC CHAIRS

On behalf of the Technical Program Committee (TPC), it is with great honor and pleasure to welcome you to this exciting event, IEEE ICC 2008, in Beijing.

This year, we had an overwhelming number of paper submissions. IEEE ICC 2008 received 3135 paper submissions from 58 countries and regions. No doubt, this is a new record in the history of IEEE ICCs/GLOBECOMs. All papers were carefully peer-reviewed by the 1053 TPC members and a large number of reviewers, with each paper reviewed by at least 3 reviewers. 1102 papers were selected and edited for presentation and publication. This accounts for a paper acceptance ratio of 35.15%. Of the 1102 accepted papers, 886 will be presented in oral sessions and 216 will be presented as posters. Both oral and poster papers are of the same quality but only differ from the form of presentations. Accepted papers were then grouped into 150 oral sessions and 32 poster sessions under the 10 technical symposia.

The Engineering Management mini-conference is a new trial in the history of ICC/Globecom, and is jointly sponsored by IEEE Communications Society and IEEE Technological Management Council. Based on the paper scores, the review comments, and the recommendation from the corresponding symposium chairs, 11 papers have been selected to receive the IEEE ICC 2008 Best Paper Awards.

In addition to the technical sessions, a total of 77 tutorials, 15 workshops, and 11 panel proposals have been received from open calls. After careful reviews by the corresponding co-chairs, 26 tutorials, 8 workshops (with 102 papers), and 9 panels have been selected and will be presented at the conference. The purpose of these workshops and panels is to provide a platform for presenting the latest technical and business issues in communications and networking topics as well as novel ideas and more specific research areas in a less formal and possibly more focused way.

Another highlight of the conference is the Keynote Addresses. This year, 5 keynotes will be delivered by distinguished scientific experts and industry leaders from the Asia-Pacific, Europe, and America. These include Dr. Jianzhou Wang (CEO of China Mobile Communication Corporation), Dr. Xiaochu Wang (CEO of China Telecommunication Corporation), Prof. Vincent Poor (Princeton University), Dr. Stephan Scholz (CTO of Nokia Siemens Networks), and Dr. Jan Uddenfeldt (Senior Vice President of Ericsson). During the Award Luncheon, a keynote speech by Mr. Scott McGregor (CEO of Broadcom) has also been planned. Moreover, several special sessions within the so-called "China Forums" have been arranged to address the fast-developing Chinese telecommunication markets.

You will find the technical program of IEEE ICC2008 very stimulating, informative and inspiring. Such program would not be possible without the hard work and devotion of many of our volunteers. In particular, we would like to extend our sincere thanks and appreciation to the exceptional work rendered by all the Symposia chairs, Tutorial chairs, Panel chairs, Mini-conference chairs, as well as the Workshop chairs and their TPC members and reviewers who made high quality reviews under a tight schedule.

We cordially invite all of you to join us and interact with experts in the communications and networking field from all around the world. We highly encourage interactions with our outstanding keynote speakers and panelists as they are all distinguished in their fields. In the meantime, do not forget to enjoy our beautiful city and the many amenities that it has to offer to special visitors and guests.

We assure you will have a **memorable** experience at ICC 2008 in Beijing.



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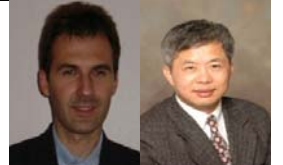
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Muriel Medard, MIT	Xiang-Gen Xia, University of Delaware	Lie-Liang Yang, University of Southampton	Yonghong Zeng, Institute for Infocomm Research
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Tibor Cinkler, Budapest University of Technology and Economics	Yuriy Zakharov, University of York	Lutz Lampe, University of British Columbia	Zhengang Pan, University of Hong Kong
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Vinod Vokkarane, University of Massachusetts Dartmouth	Wireless Communications	Maggie Cheng, University of Missouri	Zhi Tian, Michigan Technological University
Wai Pang Ng, Northumbria University	Alberto Zanella, CSITE-CNR, DEIS, University of Bologna	Marco Chiani, University of Bologna	Zhifeng Tao, Mitsubishi Electric Research Laboratories
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Wojciech Kabacinski, Poznan University of Technology	Alhussein Abouzeid, Rensselaer Polytechnic Institute	Maria Luisa Merani, University of Modena and Reggio Emilia	Zhihong Hong, Communications Research Centre
Xavier Masip-Bruin, Technical University of Catalonia (UPC)	Ali Almutairi, Kuwait University	Mario Marchese, DIST- University of Genoa	Zhongding Lei, Institute for Infocomm Research
Yixin Wang, Institute for Infocomm Research, Singapore	Amine Maaref, University of Quebec, INRS-EMT, Canada	Markku Juntti, University of Oulu	Zhu Han, University of Maryland, College Park
	Anand Prasad, DoCoMo Euro-Labs	Matthew McKay, Hong Kong University of Science and Technology	Zihua Guo, Lenovo
	Andrea Conti, IEIIT/CNR Univ. of Bologna, ENDIF Univ. of Ferrara	Matthew Valenti, West Virginia University	Wireless Networking
	Andreas Molisch, Mitsubishi Electric Research Laboratory	Mehrdad Dianati, University of Surrey	Abdallah Shami, The University of Western Ontario
	Andrej Stefanov, Polytechnic University	Meixia Tao, National University of Singapore	Abdelhamid Mellouk, University Paris XII
		Minghui Shi, University of Waterloo	Abd-Elhamid Taha, Queen's University
		Mischa Dohler, France Telecom R&D	Abderrahim Benslimane, University of Avignon
		Mohamed Moustafa Abd-El Aziz Moustafa, AIU	ACM Fong, Nanyang Tech Univ
		Mohammad Banat, Jordan University of Science and Technology	Adam Wolisz, Technical University of Berlin
			Aggelos Bletsas, Massachusetts Institute of

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Ahmed Mehaoua, University of Paris - Descartes	Hyang-Won Lee, Korea Advanced Institute of Science and Technology	Seyed Zekavat, Michigan Technological University	Andrea Tonello, University of Udine
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Andrej Stefanov, Polytechnic University	James Joshi, University of Pittsburgh	Sonja Buchegger, Deutsche Telekom Laboratories	Franco Davoli, University of Genoa
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Anura Jayasumana, Colorado State University	Jianfei Cai, Nanyang Technological University	Stefano Basagni, Northeastern University	Gonzalo Seco Granados, Universitat Autònoma de Barcelona
Arjan Duresi, Indiana University Purdue University Indianapolis	Jianfeng Wang, Philips Research	Stefano Giordano, University of Pisa	Hung Nguyen, The Aerospace Corporation
Ashfaq Khokhar, University of Illinois at Chicago	Jianping Pan, University of Victoria	Stephen Hailes, University College London	Igor Bisio, University of Genoa
Aura Ganz, University of Massachusetts at Amherst	Jie Gao, Stony Brook University	Steven Gordon, Thammasat University	John Newbury, Open University
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Giovanni Pau, University of California Los Angeles	Pedro Ruiz, University of Murcia	Yu Chen, State University of New York - Binghamton	
Giulio Galante, Consultant for Nokia Siemens Networks	Periklis Chatzimisios, TEI of Thessaloniki	Yu Cheng, Illinois Institute of Technology	
Glen Takahara, Queen's University	Persefoni Kyritsi, Aalborg University	Yu Wang, Univeristy of North Carolina at Charlotte	
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Gurhan Kucuk, Yeditepe University	Pietro Michiardi, Institut EURECOM	Zhou Su, Waseda University	
Habib Hamam, University of Moncton	Polychronis Koutsakis, McMaster University	Zongpeng Li, University of Calgary	
Hai Jiang, University of Alberta	Prasant Mohapatra, University of California, Davis	General Symposium	
Haitao Wu, Microsoft Research Asia	Qiang Ni, Brunel University	Abdelhamid Nafaa, University College Dublin	
Helen Karatza, Aristotle University of Thessaloniki	Raghupathy Sivakumar, Georgia Institute of Technology	Alban Duverdier, Centre National D'Etudes	
Henk Wymeersch, Massachusetts Institute of	Raheem Beyah, Georgia State University		
	Rami Langar, University of Waterloo		
	Renato Lo Cigno, Universita' di Trento		
	Rui Aguiar, Universidade de Aveiro		
	Salil Kanhere, University of New South Wales		
	Sameer Tilak, University of California at San Diego		
	Sanaa Sharafeddine, Lebanese American		

ICC2008 Program At-a-Glance

ICC2008 Program At-a-Glance																				
Room	Seats	Mon (19 May)			Tue (20 May)				Wed (21 May)					Thu (22 May)					Fri (23 May)	
		8:30 12:00	14:00 18:00	18:30 21:00	8:30 12:00	12:00 14:00	14:00 15:45	16:15 18:00	8:30 10:15	10:45 12:30	14:00 15:45	16:15 18:00	18:30 21:00	8:30 10:15	10:45 12:30	14:00 15:45	16:15 18:00	18:30 21:00	8:30 12:00	14:00 18:00
No.2-A	300			Welcome Reception (Central Garden of BICC)	Opening Plenary (No.1 Hall)	Award Luncheon (Crowne Plaza Hotel)	PA01	PA02	PA03	PA04	PA05	PA06	Conference Banquet (The Great Hall of the People)	PA07	PA08	PA09		Student Night (Tsinghua U., BUPT, BUAA)		
No.2-B	300						CF01		CF02		CF03			CF04		CF05				
No.2-C	300						AN01	AN02	AN03	AN04	AN05	AN06		AN07	AN08	AN09	SP13			
201-A	140						ON01	CS01	ON02	ON03	ON04	CS02		CS03	ON05	ON06	ON07			
201-B	130						EM01	EMpa	IS03	IS04	EM02	EM03		GS03	GS04	IS07	IS08			
201-C	100						IS01	IS02	GS01	GS02	IS05	IS06		EM04		GS05	GS06			
202	40						WC01	WC06	WC11	WC16	WC21	WC25		WC29	WC33	WC38	WC43			
302	50	TU05	TU12				WC02	WC07	WC12	WC17	WC22	WC26		WC30	WC34	WC39	WC44		TU19	TU24
303	50	TU06	TU13				WC03	WC08	WC13	WC18	WC23	WC27		WC31	WC35	WC40	WC45		WS05	WS08
305-A	60	WS07	WS06				WC04	WC09	WC14	WC19	WC24	WC28		WC32	WC36	WC41	WC46		WS03	
305-B	150	WS01					Meeting Room							Meeting Room		CT10	CT12		WS04	
305-C	160	WS02					WC05	WC10	WC15	WC20	SP05	SP07		CT07	WC37	WC42	WC47			
306	40	TU07	TU14				SP01	SP02	SP03	SP04	SP06	SP08		SP09	SP10	SP11	SP12			
307	140						CQ01	CQ02	CQ03	CQ04	CQ05	CQ06		CQ07	CQ08	CQ09	CQ10			
308	110	TU23	TU26				CT01	CT02	CT03	CT04	CT05	CT06		CT08	CT09	CT11	CT13		TU15	TU20
310	50	TU01	TU08				WN01	WN04	WN07	WN10	WN13	WN16		WN19	WN22	WN25	WN28		TU16	TU21
311-A	50	TU02	TU09				WN02	WN05	WN08	WN11	WN14	WN17		WN20	WN23	WN26	WN29		TU17	TU22
311-B	50	TU03	TU10				WN03	WN06	WN09	WN12	WN15	WN18		WN21	WN24	WN27	WN30		TU18	TU25
311-C	50	TU04	TU11				CS1p	ON1p	CT1p	CT2p	GS1p	ON2p		IS1p	IS2p	AN1p	AN2p			
Exhib. No.2 Hall		Registration		WC1p	WC2p	WC3p	WC4p	WC5p	WC6p	WC7p	WC8p	WC9p	WC10p							
				WN1p	CQ1p	WN2p	WN3p	CQ2p	WN4p	WN5p	SP3p	WN6p	CQ3p							
				SP1p	SP2p															

AN: Advances in Networks and Internet;
 CF: China Forum;
 CQ: Communication Quality, Reliability, and Performance Modeling;
 CS: Communication Software and Services;
 CT: Communication Theory;
 ON: Optical Networks and Systems;
 EM: Engineering Management Mini-Conference;
 GS: General Symposium;
 IS: Information and Network Security;
 PA: Panels;
 SP: Signal Processing for Communication;
 TU: Tutorials;
 WC: Wireless Communication and Systems;
 WN: Wireless Networking;
 WS: Workshops

OPENNING PLENARY and KEYNOTE SPEECHES

Time: 8:30-12:00, 20 May (Tuesday), 2008

Venue: No.1 Hall of Beijing International Convention Center (BICC)

Chairs: Jichuan Wu and Ke Gong

Opening Plenary: 8:30-9:00, 20 May (Tuesday), 2008

- 8:30-8:35: Welcome by General Chair
- 8:35-8:40: Opening by IEEE ComSoc President
- 8:40-9:00: Address by Government Officer

Keynote Speech #1: 9:00-9:30, 20 May (Tuesday), 2008



Jianzhou Wang

President and CEO, China Mobile Communications Corporation

The Convergence of Mobile Communication and Internet: Technology, Business Model and Challenge

Abstract: With the constant convergence of terminal, network, content and application, mobile communication and Internet have also a tendency to converge. Mobile Phones have become a widely used facility with various multimedia applications, which further promote the birth of new service models in this Internet age. While the mobile Internet services are developing prosperously, traditional telecom-operators as well as manufactures are facing both challenges and opportunities never before. Innovations on Tech., OMA, and Business models are strongly called for operators. Operators have to develop together with and support all participants in the telecom industry to better satisfy our customers, to build a harmonious mobile internet industrial environment, and to achieve a corporate-win future!

Biography: PhD in Business Administration, Hong Kong Polytechnic University; Master's degree, Department of Management Engineering, Zhejiang University. Director-General, Posts and Telecommunications Bureau, Hangzhou City; Deputy Director-General, Posts and Telecommunications Administration, Zhejiang Province; Director-General, Department of Planning and Construction, Ministry of Posts and Telecommunications; Director-General, Department of Planning, Ministry of Information Industry; Executive Vice-President, China Unicom; Chairman and President, China Unicom. Currently: Chief Executive, China Mobile; Chairman and Chief Executive Officer, China Mobile Limited.

Keynote Speech #2: 9:30-10:00, 20 May (Tuesday), 2008



Xiaochu Wang

President and CEO, China Telecommunications Corporation

The Convergence in Development and the Transformation of the Enterprise

Abstract: The expansion of the international telecom industry to information service, in which the IP communications, IT technology, and information content and applications (3I) are converged, will provide favorable experience for the communications operators in the implementation of corporate transformation and the exploration of new development space. The rise of the new technologies represented by VoIP, P2P, WiFi and WiMAX, and the transfer of the industrial chain from the transmission layer to the application layer have had huge impact on the income base of the telecom operators. The launch of some new types of terminals, such as iPhone and G-Phone, triggers the emergence of a business model with the operation involving the intelligence terminals, and weakens the profit-making mode with the operators as the leading force. The implementation of the strategy of strengthening the country through telecommunications will promote the implementation of some policies, such as the policies for the

adjustment of the state-owned capitals, the restructuring of the state-owned enterprises, and the forming of a reasonable industrial structure, and will accelerate the communications industry in China to develop towards the full-service operation and the convergence of the three networks. Through the three-year's transformation, the domestic telecom operators are turning into the integrated information service providers, which provides good experience for the transformation of the telecom industry around the world.

Biography: Mr. Wang has held positions such as director-general of the Hangzhou Telecommunications Bureau in Zhejiang province, director-general of the Tianjin Posts and Telecommunications Administration, chairman and chief executive officer of China Mobile (Hong Kong) Limited, and vice president of China Mobile Communications Corporation. Currently, he is the President of China Telecommunications Corporation and Chairman of the Board of Directors and a non-executive director of China Communications Services Corporation Limited. He was responsible for the development of China Telecom's telephone network management systems and various other information technology projects and as a result, received the Class Three National Science and Technology Advancement Award and the former Ministry of Posts and Telecommunication's Class One Science and Technology Advancement Award. Mr. Wang graduated from Beijing Institute of Posts and Telecommunications in 1980 and received a Doctorate degree in Business Administration from The Hong Kong Polytechnic University in 2005. He has over 26 years of management experience in the telecommunications industry.

Coffee Break (10:00-10:30)

Keynote Speech #3: 10:30-11:00, 20 May (Tuesday), 2008



H. Vincent Poor

Professor and Dean, Princeton University

The Future of Wireless Networks: A Researcher's Perspective

Abstract: Over the past two decades, wireless networks have expanded and evolved at an astonishing rate, driven by seemingly insatiable demand for greater capacity, and enabled by remarkable technical developments. Until relatively recently, many of the key technical developments in wireless networking have involved significant improvements at the physical layer, as the technology of wireless links has steadily approached fundamental limits. While the wireless physical layer continues to present major challenges and to yield important new capabilities, in recent years researchers have looked increasingly to higher-layer interactions among nodes in order to obtain even greater efficiencies in the use of wireless resources. This talk will discuss a number of such developments and their potential impact on emerging and future wireless networks.

Biography: H. Vincent Poor is the Dean of the School of Engineering and Applied Science at Princeton University, where he is also the Michael Henry Strater University Professor of Electrical Engineering. He has been involved in research, teaching and consulting in the field of wireless systems and networks for approximately three decades. He has recently published the book, *MIMO Wireless Communications* (Cambridge University Press, 2007), co-authored with Ezio Biglieri, et al.

Dr. Poor is a member of the U. S. National Academy of Engineering, a Fellow of the American Academy of Arts & Sciences, and a former Guggenheim Fellow. He is also a Fellow of the IEEE, the Institute of Mathematical Statistics, the Optical Society of America, and other scientific and technical organizations. Recent recognition of his work includes the 2005 IEEE Education Medal and the 2007 IEEE Marconi Prize Paper Award.

Keynote Speech #4: 11:00-11:30, 20 May (Tuesday), 2008



Stephan Scholz

Head of RTP and CTO of Nokia Siemens Networks

A vision of Tomorrow's Connected World

Abstract: Stephan Scholz gives the Nokia Siemens Network's view on how the telecommunication network's will evolve in the next decade. First step will be to consolidate the major challenges and drivers from business perspective. In a second step those drivers will be condensed in the most important technology requirements the network has to fulfill in order to cope with those challenges. In the final part of its presentation Stephan Scholz will show how those requirements could be addressed with upcoming technologies and new architectural approaches.

Biograph : Stephan Scholz is Head of Research, Technology and Platforms of Nokia Siemens Networks. In this position responsible for all research activities, longterm (beyond 2 years) technology developments and cross-functional R&D investments of NSN.

Keynote Speech #5: 11:30-12:00, 20 May (Tuesday), 2008



Jan Uddenfeldt

Senior Vice President and Senior Advisor Technology of Telefonaktiebolaget LM Ericsson

The Future of Full Service Broadband

Abstract : Broadband is developing fast and by 2012, we expect almost 2 billion users to have a fixed or mobile broadband connection, in which the majority will be mobile broadband. Broadband enables richer communication, opening doors to concrete, innovative, affordable and effective services which help increase productivity of countries, quality of life for people, bridge the digital divide and thus contribute significantly to the sustainable development of the society.

Full Service Broadband is an enabler to fulfill such goals. It allows operators to design and launch exciting new services that are accessible anytime, anywhere and from any device. In particular, with cost effective 3G mobile broadband rapidly expanding globally, consumers today can already enjoy a data transfer speed of up to 7 Mbps from their PC at a low price. Furthermore, the mobile technology evolution is developing strongly, and with the new LTE technology, speeds of 100 Mbps will be achieved in the near future. At the same time, Fiber-To-The-Home is also an attractive technology for broadband connections in urban areas offering IPTV and other solutions.

With a ubiquitous Full Service Broadband network being the new information highway reaching to each corner of the earth, we can hardly imagine what immense impact it will bring to everyone's life and the society as a whole.

Biograph : Dr. Jan Uddenfeldt joined Ericsson in 1978, after having received a Master of Science in Electrical Engineering and a Ph.D. in Teletransmission Theory at the Royal Institute of Technology in Stockholm. He was also the adjunct Professor at the Royal Institute of Technology in the mid-1980s, and holds an honorary doctorate from the Technical Faculty, University of Lund.

In 1985, Dr. Uddenfeldt became the head of the Research Department at Ericsson Radio Systems, and in 1990, he became Vice President of the Research and Development at Ericsson Radio Systems, covering worldwide responsibility for the research and development of Ericsson's cellular radio products. Dr. Uddenfeldt has been actively involved in the development of both second generation wireless technologies and third generation WCDMA and EDGE. In 1998, he became the Chief Technology Officer and Senior Vice President for Ericsson, where he was responsible for Ericsson's worldwide activities in Research and Development. Dr. Uddenfeldt chairs the Ericsson Technology Boards, ensuring a common architecture and seamless services across the company and with alliance partners worldwide. On January 1, 2004, Dr. Uddenfeldt was appointed Senior Vice President and Senior Advisor Technology.

Born 1950, Dr. Uddenfeldt has more than 20 independent patents in the area of digital communication.



Scott McGregor

President and CEO of Broadcom Corporation

Enabling the Next Leap in Mobile / Broadband Communications Innovation

Abstract: Semiconductor innovations have traditionally fueled smaller, more capable products. Now, like the PC industry before it, communications systems and devices are poised to follow an even more aggressive semiconductor cost/performance curve. But instead of cramming more transistors into smaller spaces, it's about unleashing the power of analog, digital and mixed-signal technology on monolithic devices manufactured in low-cost CMOS process technology. Building on the foundation of the world's first all-digital analog-to-digital converter more than a decade ago, Broadcom has shown how innovations can be re-used to fuel expanding pipelines of incremental new innovations. The result is a virtuous spiral of continuous innovation. By enabling increasing levels of analog, mixed-signal and digital functionality to co-exist within ever-more complex and economical all-digital devices, Broadcom is helping to fuel one of the most prolific product-development eras in electronics history. These innovations are radically changing how broadband communications products are designed, with the potential to alter the industry's economic model. In the not-too-distant future, it will be possible, for instance, to consolidate high-end cellphone functionality into one or two small, inexpensive chips. Broadcom CEO Scott McGregor will discuss key developments that are driving unprecedented broadband communications advances, from the inside out.

Biograph : Mr. McGregor, who is also a member of the Board of Directors, joined Broadcom in January 2005 after serving since September 2001 as President and CEO of the Philips Semiconductors division of the Netherlands-based Royal Philips Electronics, At Philips, Mr. McGregor oversaw one of the world's largest semiconductor suppliers, with 34,000 employees in over 50 countries and nearly US\$6 billion in sales in 2004. In addition to his CEO role, he was also a member of the Group Management Committee of Royal Philips Electronics. He joined Philips Semiconductors in February 1998 as head of its Emerging Business unit, focusing on fast growing markets for smart cards, RFID, networking, digital media processing and computing, and leading the group to profitability and nearly US\$1 billion in sales.

Before joining Philips, from 1990 to 1998 Mr. McGregor served in various senior management positions, most recently as Senior Vice President and General Manager, at Santa Cruz Operation Inc. (SCO), a provider of network computing solutions. From 1985 to 1990 he served in senior positions at Digital Equipment Corporation (now part of HP) where he led the UNIX workstation software group and was one of the architects of the X Window System. Prior to joining Digital Equipment Corporation, he worked at Microsoft, where he was the Director of the Interactive Systems Group and the architect and development team leader of the original version of Microsoft® Windows®. Prior to Microsoft, Mr. McGregor spent over six years in various positions at the Xerox Corporation's Palo Alto Research Center (PARC), where he was involved in designing software for the first personal computers employing graphical user interfaces. Mr. McGregor received a B.A. in Psychology and a M.S. in Computer Science and Computer Engineering from Stanford University.

PANELS

All Panels will be held in Room No.2-A, BICC

PA01: Wireless Sensor Networks – Ripe or Hype? An Industrial View

Time: 14:00 – 15:45, May 20 (Tuesday)

Organizer:

Mischa Dohler (France Télécom R&D)

Panelists:

- (1) David Culler (Arch Rock)
- (2) Mike Horton (Crossbow Technologies)
- (3) Christophe Dugas (Coronis)
- (4) Dominique Barthel (France Telecom R&D)
- (5) Zach Shelby (Sensinode)

Sensor networks have been researched and deployed for decades; their wireless extension, however, has witnessed a tremendous upsurge in recent years. This is mainly attributed to the unprecedented operating conditions of wireless sensor networks (WSNs), i.e. a potentially enormous amount of sensor nodes, reliably operating under stringent energy constraints. The virtually infinite degrees of freedom of wireless sensor networks have ignited intense research activities, which in turn led to thousands of publications, white papers and patents in less than a decade, with new contributions emerging on a daily basis. The aim of the panel, however, is to explore whether this enthusiasm in research has been or will be picked up by the industry. We also aim to explore which lessons can be learned from the commercialization of WSNs and how the R&D arena can profit from this in the upcoming years. The invited panellists are pioneers in this area and are hence ideal to give great insights into related developments.

PA02: Wireless Multimedia Futures

Time: 16:15 - 18:00, May 20 (Tuesday)

Organizer:

Lajos Hanzo (University of Southampton)

Panelists:

- (1) Gerhard Fettweis (Dresden University)
- (2) Lajos Hanzo (University of Southampton)
- (3) Vincent Poor (Princeton University)
- (4) Steve Weinstein (Consultant)

Commencing with a historical perspective, this research-oriented panel considers the future trends expected to shape the wireless multimedia communications scene. The spectacular success of GSM was followed by the creation of an array of recent wireless standards, although not all of them have become equally successful. Nonetheless, they have all contributed towards developing the underlying impressive enabling techniques, such as adaptive

modulation and coding (AMC), MIMOs, cooperative communications, etc. The basic rationale of the MIMOs' success is that they are capable of breaking free from the channel capacity limitations of classic Single-Input Single-Output (SISO) systems obeying the Shannon-Hartley, provided that their antenna elements may be positioned sufficiently far apart for ensuring their independent fading. This is however rarely the case in realistic shadowing environments, where AMC and cooperation may be able to prevent the erosion of the MIMO capacity. This panel aims to involve our research community in outlining a range of open problems and defining a roadmap for solving them. In the current era there is still a substantial gap between the theoretical predictions and the practically attainable performance of wireless systems. A particularly challenging research driver is constituted by the Wireless Internet, especially when considering immersive high-motion, high-resolution applications. Thousands of researchers address the problems of ad hoc networks, but the theoretical predictions of Gupta and Kumar indicate that their per-node capacity tends to zero upon increasing the number of nodes supported by the network. What are its ramifications for the worthy cause of the global 'one-laptop-per-child' project?

Do join us for an exhilarating debate on the future of wireless!

PA03: Mobile WiMAX – What is Down the Road?

Time: 08:30 – 10:15, May 21 (Tuesday)

Organizers:

Hikmet Sari (SUPELEC and SEQUANS Communications)

Byeong Gi Lee (Seoul National University)

Panelists:

- (1) Hamid Aghvami (King's College London)
- (2) Hyun-Pyo Kim (WiBro Business Unit)
- (3) Christophe Lerouge (WiMAX Product Line, Alcatel-Lucent)
- (4) Garik Markarian (RINICOM)
- (5) Joonho Park (Global Standards & Research, Samsung Electronics)

The mobile WiMAX system specifications were finalized by the *IEEE 802.16 Group* and mandatory system profiles were defined by the *WiMAX Forum* back in 2005. Product developments are currently on-going, and we should see the first *WiMAX Forum certified products* in the second quarter of 2008. After extensive private and public interoperability testing, followed by successful commercial services by KT in Korea, the year 2008 is going to be the beginning of mass deployment of mobile WiMAX, which is the only wireless

technology today offering both broadband services and mobility. In addition to the WiBRO network which is in place in Korea with over 120,000 subscribers, Sprint/Xohm is launching its service in the US in Q2 2008, and KDDI is planning to conduct extensive trials this year in Japan towards a service launch in 2009. The purpose of this panel is to discuss technical and business aspects of mobile WiMAX, the opportunities offered by this new technology, and the challenges that it is facing. Industry Executives from North America, Europe and Asia-Pacific will share their views, experience, plans for the near future, as well as their vision concerning the evolution of mobile WiMAX. The panel will also discuss the inevitable question of mobile WiMAX vs. 3GPP Long Term Evolution (LTE), which is the other route to future 4G systems. Is it competition or convergence that we have down the road?

PA04: On the Management of Ubiquitous Multimedia Communication

Time: 10:45 – 12:30, May 21 (Wednesday)

Organizer:

Jong-Tae Park (Kyungpook National University)

Panelists:

- (1) Mehmet Ulema (Manhattan College)
- (2) Raouf Boutaba (University of Waterloo)
- (3) Yan Ma (Beijing University of Posts and Telecommunications)
- (4) Weijia Jia (City University of Hong Kong)

Recently, the ubiquitous multimedia communication receives much attention due to its promising new business opportunity in IT and other related areas. In a ubiquitous environment, the surrounding contextual information acquired from sensors, GPS, and people plays very important role for the intelligent decision making process. Ubiquitous multimedia communication is characterized by the invisibility of objects, proactive context-awareness and adaptation, seamless mobility management and (broadband) near field communication technology in addition to conventional QoS management for effective multimedia communication. The ubiquitous communications require wireless networking and infrastructure network support. There have been lots of research works going on throughout the world. The ubiquitous environment requires a new paradigm of management which may include ubiquitous multimedia interface management, surrounding context management, network/media/service convergence management, security, location management and power management in addition to the traditional network management technologies. It also requires the management of heterogeneity for the integrations of the various wireless and wired networks to setup/maintain the real-time video/audio connections. In this panel, we will discuss the issues, problems, current research efforts, and outcomes in the management of ubiquitous multimedia communication.

PA05: Cognitive Radio Wireless Networking: An Emerging Frontier

Time: 14:00 – 15:45, May 21 (Wednesday)

Organizers:

Honggang Zhang (Zhejiang University)

R. Chandramouli (Stevens Institute of Technology)

Panelists:

- (1) Joseph Evans (University of Kansas)
- (2) K. P. Subbalakshmi (Stevens Institute of Technology)
- (3) Ian F. Akyildiz (Georgia Institute of Technology)
- (4) Carlos Cordeiro (Intel)

Access to radio spectrum is presently regulated either as licensed, where the rights to use specific spectral bands are granted in exclusivity to an individual operator, or as unlicensed, where certain spectral bands are declared open for free use by any operator or organization following specific rules. While these conventional paradigms have allowed the wireless communications sector to blossom in the past years, there are more interests recently about the so-called "*cognitive radio networks (CRN)*" frontier, wherein spectrum may be efficiently shared in a more flexible and efficient fashion by a number of operators, users and systems. It is believed that cognitive radio and networks will revolutionize the way we are using the scarce wireless spectrum which is becoming more and more expensive to acquire. Cognitive radio and networking can be thus viewed as an promising technology that will benefit several types of players, by introducing new communications and networking models for the whole wireless world, creating better business opportunities for the incumbent operators and new technical dimensions for smaller operators, and helping shape an overall more efficient approach regarding spectrum requirements and usage in next generation wireless networks.

Cognitive radio wireless networking provides a fertile ground for the creative minds of our global technical community to innovate. It possesses a huge potential to become a true paradigm shifting technology in our telecommunications field, which is something that does not happen too often. This special panel is aimed to provide a unique platform to discuss not only the existing research themes and status on cognitive radio and networks, but also to make out a roadmap for the future. It is planned to bring together the key-players coming from the academy, industry and standardization bodies around the world with various backgrounds and expertise, while targeting for addressing various significant aspects of cognitive wireless systems and technologies, including a broad range of communications, networking, implementation, and radio spectrum regulatory policy reform issues. Moreover, the recent worldwide standardization efforts and achievements in IEEE 802.22, IEEE 802.16h and SCC41 (IEEE P1900) working groups will be highlighted as well.

PA06: Transport Protocols in Next Generation Communications

Time: 16:15 – 18:00, May 21 (Wednesday)

Organizer:

Franklin Fu (Nanyang Technological University)

Panelists:

- (1) Wu Hequan (Chinese Academy of Engineering)
- (2) Li Xing (Tsinghua University)
- (3) Shen Wen (Huawei)

Over last two decades, particularly over last few years, TCP and TCP-friendly research are hottest topics both in academia and industry. Many different TCP versions or variants, aiming to overcome these or those suffering the current transport protocols (i.e., TCP and UDP) are experiencing due to diverse links (i.e., wireless, satellite, ADSL, Gigalink) and different applications (i.e., voice, video and multimedia), are proposed and studied by many researchers. Among these, well-known versions are TCP Reno, TCP Vegas, TCP Veno TCP Peach, XCP, SCTP, DCCP (TFRC), HS-TCP, and FAST TCP. The most of them are only proposed within last five years.

In this panel discussion, we will invite some famous researchers as well as VIPs in industry to have detailed information sharing on the latest development of next generation transport and possible universal transport protocol in future 4th generation communications.

PA07: Emerging Wireless Technology Applications for Airplane and Airport Business

Time: 8:30 – 10:15, May 22 (Thursday)

Organizer:

Zhaofeng Ma (Phantom Works, The Boeing Company)

Panelists:

- (1) Jae Kim (Phantom Works, The Boeing Company)
- (2) Sudhakar Shetty (Boeing Commercial Airplane, The Boeing Company)
- (3) Robert Rencher (The Boeing Company)
- (4) Zhisheng Niu (Tsinghua University)
- (5) Jian Song (Tsinghua University)

Currently an on-going explosion in wireless technologies, standards, and systems options offers an opportunity to not only expand airplane capabilities in onboard collaboration, communication, tracking, and automation, but also reduce weight and cost while increasing its availability, reliability, and maintainability. For the ground services, there are also various existing and ongoing efforts to utilize emerging technology in improving maintenance operations and ramp activities in and around the airplane. This 105 minute panel discussion is specially designed for addressing how the emerging technologies, especially wireless technologies, can be applied in the airplane related business in China &

globally. The topics include:

- What is the outlook of emerging technology in the next five years?
- The emerging technology applications for airline business.
- What emerging technology can do to support the airport operations and ground maintenance services?
- The challenges for airlines in adopting emerging technology.
- The perspective for universities in China to support emerging technology R&D for airplane industry.

PA08: Cooperative Communication and Collaborative Computing

Time: 10:45 – 12:30, May 22 (Thursday)

Organizer:

Wenwu Zhu (Intel China Research Center)

Panelists:

- (1) K. B. Letaief (HKUST)
- (2) Roy Want (Intel Research)
- (3) Qian Zhang (HKUST)
- (4) David Gesbert (Eurecom)

With the great success Internet and rapid development of wireless communication and network, as well as anytime anywhere mobile Internet computing, it comes out the idea of the devices in the network to collaborative and help each other to better accomplish a common task with high performance such as quality, throughput, etc. "Cooperative communications" has recently become a key approach in realizing this idea. Meanwhile, as the communication devices' (e.g., Mobile Internet Device – MID) computing capability continues increasing and with their access to mobile Internet, the "weak device" in low power and limited computing resources need to work with other devices with high power and computing resource to accomplish a common task efficiently and effectively. This panel comprised of experts in a variety of aspects of cooperative communications and mobile computing in both Communication area and Computing area, will discuss the recent developments and future research direction and challenges in bringing true cooperation into the design of wireless communication & networks and collaboration in computing and applications. The discussion will include cooperative communication in Physical layer like cooperative MIMO/radio, cooperative networks, and collaborative computing.

PA09: Challenges & Future Directions for Vehicular Comms & Networks

Time: 14:00 – 15:45, May 22 (Thursday)

Organizer:

C. K. Toh (University of Hong Kong)

Panelists:

- (1) C.H. Yon (LG-NORTEL)
- (2) Tadao Saito (Toyota)

(3) Russell Hsing (Telcordia)

(4) Fan Bai (General Motors R&D Research Center)

Innovations made in WLANs and cellular may be finding their ways into VANETs while others debate that existing communication and protocol solutions may not be suitable due to timeliness, reliability, and safety issues. There have been efforts made by the IEEE WAVE working group but it only addresses a focused problem space. Work done by ISO TC206 WG has primarily focused on DSRC-based comms, excluding vehicular networking aspects.

In the application, usage and economics aspects, one has to look into the benefits of VANETs to drivers, passengers and

law enforcers. A VANET may enhance the driving safety of the driver himself, passengers and other drivers. To achieve successful deployment will require car makers to participate and develop VANET capabilities into next generation of cars. Opinions from industries on the economics and attractions for such a deployment will be presented.

This panel will focus on the technical challenges and future of VANETs. While this topic is hot and important, it is still unclear if VANET is a myth or hype. Panelist will debate on the rationales behind VANETs, the research and technical challenges and what lies ahead for deployment and for making it a reality.

CHINA FORUMS

All China Forums will be held in Room No.2-B&C, BICC

14:00-18:00, 20 May (Tuesday), 2008

CF01: Development of Communications Technology and Value-added Services

Chair: Yunjie Liu, Director of Science and Technology Committee of China Unicom, Academician of Chinese Academy of Engineering

Cochair: Jordan Guo, Senior Vice-president of Huawei Technologies Co., Ltd

CF01-1: Probe into the Supervision Policy of Telecommunications Value-added Services

Leader from Telecommunications Supervision Bureau, Ministry of Information Industry

CF01-2: TBD

Zhijiang Zhang, Director of Technology Department of China Unicom

CF01-3: Discussion of VAS Architecture Evaluation

Xuanyi Huang, Senior Specialist of Service Architecture, Huawei Technologies

CF01-4: Probe into the Operation and Profit Modes of Telecommunications Value-added Services

TBD (A representative of operators)

CF01-5: New Opportunities for Mobile Services Initiated by the Release of 3G Licenses

Shumin Cao, Vice President of Telecom Research Institute, Ministry of Information Industry

CF01-6: Innovative Development and Operation Management Mode of Value-added Services

TBD (A representative of overseas operators)

CF01-7: Chances and Challenges Facing Value-added Servers in the New Pattern

Presidents of Sina, Sohu, 163 and Tengxun Web portals

CF01-8: IMS Platform Accelerating the Development of Wireless Value-added Services

A representative of network equipment manufacturers

CF01-9: Interactive Development between Terminal and Mobile Value-added Services

A representative of terminal equipment manufactures

CF01-10: Sports Events - Innovating Wireless Value-added Services

Representatives from banks, news agencies and other service providers

CF01-11: Exchange and Integrity between Mobile Telecom and Web Services

A representative of Web enterprises

Panel : How to Operate for the Success of Value-added Services in 3G Era

8:30-12:30, 21 May (Wednesday), 2008

CF02: Interactive Multi-media & AVS Standards

Chair: Wen Gao, Principal Scientist of the Research Academy of China Netcom

Cochair: Yifang Yu, Vice President of ZTE Corporation

CF02-1: AVS Technology Development Status

Wen Gao, Principal Scientist of the Research Academy of China Netcom

CF02-2: IPTV Keeping operation alive through innovation

Feng Chen, Marketing Director of Multimedia Products, ZTE Corporation

CF02-3: Interactive Multi-Media Development In China

Lintao Jiang, CTO of China Academy of Telecommunication Research

CF02-4: Interactive Multi-Media Development Abroad

TBD (Spain Telecommunications)

CF02-5: Interactive Multi-media

TBD (Software provider)

CF02-6: Service Stability Design and Testing Methodology of AVS-IPTV System

TBD (UT-STARCOM)

CF02-7: Convergent Video Solution, a New Phase of Interactive Media

Max Wang, Director of Digital Media Product Mgmt. Dept., Huawei Technologies

CF02-8: Development of AVS-IPTV Standards

Tiejun Huang, Secretary-General of AVS Working Group of MII

CF02-9: Service Application of Multi-media Chips

TBD (Semiconductor provider)

CF02-10: Development of AVS-based IPTV Terminals

TBD (Hisense)

14:00-18:00, 21 May (Wednesday), 2008

CF03: Broadband Technology Development and Application

Chair: Leping Wei, CTO of China Telecom

Cochair: Stevens Yang, President of Broadband Access Network Product Line, Huawei Technologies

CF03-1: Development & Prospects of Broadband Access Networks

Leping Wei, CTO of China Telecom
CF03-2: Optical fiber access drives network evolving
Zuoqian Jiang, VP Broadband access network product line,
Huawei Technologies.Co.,Ltd.
CF03-3: Broadband Technology
TBD (NTT DOCOMO)
CF03-4: Development Plan of 21st century network
TBD (BT)
CF03-5: Broadband Home Technology
TBD (Equipment provider)
CF03-6: Network construction and operation of FTTx
TBD (ZTE Corporation)
CF03-7: Fiber Communication Chips Technology
TBD (Chip provider)
CF03-8: The Development of FTTH
TBD (Wuhan Institute of Post and Telecommunications)

8:30-12:30, 22 May (Thursday), 2008
CF04: Future Mobile Broadband & LTE
Chair: Jianming Zhou, President of Technology
Department of China Mobile
Cochair: Jian Hu, Vice President of ZTE

**CF04-1: The Significance of TD LTE development and
the Advantage of Radio Frequency**
TBD
**CF04-2: Focus on TD LTE industry and international
market propel**
TBD (China Mobile)
CF04-3: Unique advantages of TD LTE
Director of Wireless Standard Development, ZTE
Corporation
**CF04-4: Feasibility of Simultaneous development of TD
LTE & LTE FDD**
Potevio
CF04-5: System design complexity analysis of TD-LTE
Chaobin Yang, VP of Wireless Product Line, Huawei
Technologies
CF04-6: Analysis on TD LTE chip design
TBD (Spreadtrum)
CF04-7: Development of TD LTE Antenna

TBD (Ericsson)
CF04-8: Future application
TBD (Nokia)

14:00-18:00, 22 May (Thursday), 2008
CF05: Mobile Communication and Internet
Chair: Rulin Liu, Secretary-General of Chinese
Institute of Electronics
Moderator: Bill Huang, President of China Mobile
Research Institute

CF05-1: Mobile Internet Development of Triplay
TBD (Domestic Carrier)
**CF05-2: Analysis On Business Model of Carrier and
Service Provider**
TBD (Foreign Carrier)
**CF05-3: Convergence of mobile telecom and internet
based on unified and open architecture**
TBD (Senior Specialist of Strategy and Planning, Huawei
Technologies)
**CF05-4: Development of interactive model and effect
on internet application**
TBD (Microsoft)
**CF05-5: Challenge of the digital era,Who can win the
future**
Jianguo Zhang, General Manager of 3G product, ZTE
**CF05-6: The influence of innovation technology on
internet application**
TBD
**CF05-7: Development Factors of e-commerce and
future prospect**
TBD
**CF05-8: Coveraging charge to support internet
applications**
TBD
CF05-9: Innovation of mobile internet application
TBD
**Panel discussion: The cooperation and win-win of
future Mobile internet**

TUTORIALS

8:30 - 12:30 (break 10:15 - 10:45), 19 May (Monday)

TU01: Cognitive Radio Networks

Room: 310

Instructor: Ian F. Akyildiz (Georgia Institute of Technology)

Abstract: Today's wireless networks are characterized by a fixed spectrum assignment policy. However, a large portion of the assigned spectrum is used sporadically and geographical variations in the utilization of assigned spectrum ranges from 15% to 85% with a high variance in time. The limited available spectrum and the inefficiency in the spectrum usage necessitate a new communication paradigm to exploit the existing wireless spectrum opportunistically. This new networking paradigm is referred to as cognitive radio networks. In this tutorial, the novel functionalities and current research challenges of the cognitive radio networks are explained in detail. More specifically, an overview of the cognitive radio technology is provided and the network architecture is introduced. Moreover, the cognitive network functions such as spectrum management, spectrum mobility and spectrum sharing are explained in detail. The influence of these functions on the performance of the upper layer protocols such as routing and transport are investigated and open research issues in these areas are also outlined.

TU02: Ultrawide Bandwidth Systems

Room: 311-A

Instructors: Moe Z. Win (Massachusetts Institute of Technology), Andreas F. Molisch (Stanford University)

Abstract: Ultra-wide bandwidth (UWB) transmission systems have gained increasing interest in the scientific, commercial, and military sectors over the last decade. Wide bandwidth provides fine delay resolution, making UWB a viable candidate for communications and accurate positioning in dense multipath environments. Currently, UWB transmission systems are being developed for communications, localization, and sensor networks because they potentially allow low-cost production and reuse of (already occupied) spectrum. UWB also has applications in military and homeland security operations because it provides low probability of detection as well as anti-jam capabilities.

Interest in UWB systems has intensified recently due to the ruling by the US Federal Communications Commission (FCC) concerning UWB emission masks. This ruling opens the way for coexistence with traditional and protected radio services and allows the potential use of UWB transmission without allocated spectrum. Standardization bodies (like IEEE 802.15) have started to develop standards for UWB

systems and companies are announcing products. In this tutorial, we will give a technical overview that will allow the attendants to distinguish between commercial hype and the true technical possibilities.

TU03: VoIP Support for OFDMA Systems

Room: 311-B

Instructors: Sean McBeath (Huawei Technologies), Anthony C.K. Soong (Huawei Technologies), Patrick Hosein (Huawei Technologies)

Abstract: The wireless communications industry is, as more and more 3G systems are deployed worldwide, undergoing a profound transformation. It is changing from a system mainly oriented to voice services to one that can handle the tremendous requirements of high-speed data services. Two trends, however, have become evident during this transformation. The first is that, even as the deployment of 3G systems are gaining momentum, the main source of revenue for most operators, despite the growth of data services in recent years since, is still voice service. The second is the convergence to all IP (Internet Protocol) based services in communication networks. Consequently, there is great interest in the industry to provide efficient Voice over IP (VoIP) services over these newly developed systems.

Supporting VoIP in an OFDMA system provides several unique challenges, which have been addressed differently in recent wireless systems (LTE, UMB, and 802.16). In this tutorial, we will first provide an overview of the challenges associated with supporting VoIP for OFDMA systems. The first challenge deals with sharing the time-frequency resources of the system among multiple users, while controlling the associated control channel overhead. The second challenge deals with designing the overall system so that VoIP can be efficiently supported. Based on a thorough presentation of these challenges, we will then outline how VoIP is supported in the major wireless standards, together with simulation results. Next, we will describe resource management enhancements for VoIP. Finally, we will describe how VoIP performance can be further improved in future wireless systems.

TU04 Advances in Co-located and Distributed Multi-Functional MIMO-Aided Next-Generation OFDM And MC-CDMA Systems

Room: 311-C

Instructor: Lajos Hanzo (University of Southampton)

Abstract: This course is based on the lecturer's IEEE Press

- Wiley monographs, arguing that multi-standard operation is an important requirement for the future generations of wireless systems. Hence a future-proof design framework will be introduced, adaptive coding and modulation will be combined with multi-functional MIMOs for mitigating the correlated fading introduced by shadow-fading and joint channel and data estimation will be employed for SDMA-aided multi-user MIMO-OFDM. Furthermore, powerful, near-maximum-likelihood (ML) sphere detectors (SD) and genetic algorithm (GA) assisted detectors, time- and frequency-domain (TFD) spreading, interleaved division multiple access (IDMA), near-capacity layered steered space time codes and their cooperative counterparts will be reviewed.

TU05 Wireless Network Information Theory

Room: 302

Instructor: Liang-Liang Xie (University of Waterloo)

Abstract: How much information can a wireless network transport, and how should the nodes cooperate to transfer information? We are interested in the best throughput performance a wireless network can achieve. For this, one naturally turns to the field of information theory, and especially, network information theory that deals with channels of multiple source-destination pairs.

We briefly review some basics of network information theory, while our focus is on its recent development for wireless networks. On one hand, wireless networks brought both opportunities and challenges to information theory; on the other hand, information theory indeed can provide fundamental guidance to the operation of wireless networks. We will discuss both upper bounds and achievability results. Specific topics include cut-set bound, relay, network coding, scaling laws, etc. For relay networks, we will focus on the decode-and-forward strategy with different coding schemes such as successive decoding, sliding-window decoding, and backward decoding, and discuss their relative advantages and drawbacks. We will expose the essential idea of network coding by introducing the classical technique of random binning, and demonstrate a natural way to extend to wireless network coding.

TU06 Digital Media Distribution: Trends, Challenges and Opportunities

Room: 303

Instructors: Sanjoy Paul (Convergence Technology Lab, Infosys Technologies Limited), Katherine Guo (Bell Labs)

Abstract: This tutorial will focus on the details of architecture, protocols, and algorithms for delivering video over a hybrid multi-technology-wireless and wired network highlighting how the various technology trends may be used in an efficient manner to enable a service provider to deliver video at a very low cost/MB without sacrificing quality of experience for consumers and in the process, generating revenue from a

range of video-based services. This tutorial will also provide in-depth knowledge of how Telecom service providers would deliver high quality video over IP networks in a cost-effective manner to compete with cable and satellite service providers. Moreover, the challenges for a mobile wireless service provider to deliver high quality video in a secure manner to customers anytime anywhere will be discussed together with potential solutions. In addition, topics, such as, scalable video on demand using a combination of smart scheduling technology, IP multicasting, and XML-based semantic routing will also be covered. Advances in video codecs will be briefly touched as well together with security issues and Digital Rights Management (DRM). Finally, the tutorial will cover a variety of research topics in the area of digital video distribution and also profile a number of prominent start-up companies in the space.

TU07 Next Generation Mobile Broadband Wireless Technologies: Cooperative Communications and Relaying

Room: 306

Instructors: Chia-Chin Chong (DoCoMo Communications Laboratories), Mike Hart (UK Broadband Ltd.), Yuefeng Zhou (NEC Europe)

Abstract: Next generation mobile broadband wireless networks, such as 3GPP LTE, 3GPP2 UMB, WiMAX, etc. recently have gained tremendous momentum in the industrial and academic sectors. The advantages based on throughput, latency, spectral efficiency, and advanced antenna support, ultimately enabling them to provide higher performance than today's wide area wireless technologies.

Coverage improvement and capacity enhancement are always the essential requirements for wireless broadband networks in order to deliver cost-effective wireless services. Due to significant loss of signal strength along the propagation path especially at higher frequency and the transmit power constraint of mobile terminals, the sustainable coverage area for a specific high data rate is often of limited geographical size. In addition, blocking and random fading frequently result in areas of poor reception or even dead spot within the coverage region. Moreover, as the data rate demand of mobile applications increases, the effective coverage range given a fixed transmit power becomes less. Conventionally, this problem has been addressed by deploying base stations (BSs) in a denser manner. However, the high manufacturing, deployment and maintenance cost associated with BSs, and potential aggravation of interference, among others, render this approach less desirable.

Due to the higher demand for good quality multimedia applications, such as video streaming and video-on-demand, capacity enhancement is a must for the next generation cellular networks. However, continuously increasing the bandwidth to enhance the capacity is impractical because of the scarcity of spectrum availability. Advanced technologies, such as HARQ, MIMO, AAS (Advanced Antenna System),

and FFR (Fractional Frequency Reuse) could be used to provide wider coverage and higher data rate. However, the achieved coverage gain and data rate improvement are very limited comparing to deploying more BSs in the network, and the cost of terminals will increased dramatically by using these technologies.

Recently, the areas of cooperative communications and relaying have received a lot of attention from both industrials and academic. It has been envisioned as a practical solution that can improve both the coverage and capacity of a system in a cost effective fashion. Recently, more industrial standards have started to include relaying and cooperative communication features. One evident example is that the first industrial multi-hop relay standard draft, namely, IEEE802.16j, which was recently issued to amend current mobile WiMAX standard in order to provide a complete multi-hop relay system solution. Cooperative communications has also been already included in mobile WiMAX, and is further emphasized in IEEE802.16j.

This tutorial will focus on the fundamentals, motivating applications, and peculiarities of multi-hop relaying and cooperative communications to improve the coverage and capacity in mobile broadband wireless networks. Other advanced technologies, such as HARQ, MIMO, AAS and FFR will also be discussed. A quantitative discussion on system performance will be provided to further elaborate the peculiarities of these advanced technologies.

TU 23: A Crash-Course on Cooperative Wireless Networks

Room: 308

Instructors: Mischa Dohler (France Telecom), Hamid

Aghvami (King's College London)

Abstract: The aim of this tutorial is hence to expose an industrial and academic audience to the cutting-edge challenges related to the analysis, design and deployment of such cooperative wireless communication networks. In particular, first, we will dwell on Application Scenarios to give some ideas about applicability and business opportunities of these techniques. Second, Definitions shall be given to make sure that people with different backgrounds harmonize on the understanding of cooperative systems. Third, Background & Milestones shall be dwelled on to show who has advanced what in this fast-moving field. Before diving into practical issues, we shall dwell on Capacitive and Outage Bounds for this type of networks, as well as discuss the scaling behavior of some chosen topologies. Then, we shall discuss Hardware Issues so as to eliminate myths on what can and cannot be done in reality. Important to network design is also Channel Modeling where in this context we will show that cooperative channel models are different from traditional ones. We then will commence with Physical Layer Algorithms, and in particular synchronous and lately emerging asynchronous transparent and regenerative single and multi-carrier relaying algorithms which are potentially applicable to WiMAX and LTE type systems. We then will discuss Medium Access Control Protocols and their applicability to cooperative networks; this part shall also include issues related to cross-layer design with PHY. We then show the Application and Economic Benefits of these techniques to incumbent and emerging wireless systems, including WiMAX and LTE derivatives, and we will also show the interest of companies like France Telecom in these approaches. Finally, Conclusions and Road Ahead shall be exposed as well as some thoughts about what is ripe and what is hype.

14:00 - 18:00 (break 15:45 - 16:15), 19 May (Monday)

TU08 Passive Optical Networks for Broadband Access

Room: 310

Instructor: Nirwan Ansari (New Jersey Institute of Technology)

Abstract: With the recent advances in optical fiber technologies, a dramatic increase in bandwidth has been facilitated in the backbone network through the penetration of wavelength-division multiplexing (WDM) technology, which provides tens of Gbps per wavelength. At the same time, local area networks (LANs) have been scaled up from 10Mbps to 100 Mbps and are being upgraded to Gigabit Ethernet speeds. However, the access network in between only runs at low Mbps or even Kbps bandwidth speeds. As an inexpensive and scalable solution to the bottleneck problem of broadband access, passive optical networks PONs address the last mile of the communications infrastructure between the service provider's central office (CO) and customer sites. After briefly reviewing the wired

access technologies, including DSL and cable modem, this tutorial provides a comprehensive overview of PONs, including the network architecture and enabling technologies, as well as diverse versions of PONS and their corresponding protocols. A close examination of the resource management issue along with the state-of-art schemes over time division multiplexed PONs (TDM-PONs) will be presented. Moreover, a unified state space representation will be introduced to describe the management on TDM-PON upstream resource. Research directions are also highlighted for future exploration.

TU09 Cognitive and Cooperative Wireless Networks

Room: 311-A

Instructor: Kwang-Cheng Chen (National Taiwan University)

Abstract: Cognitive radio based on software defined radio has been considered as a key technology in future wireless

communications, which fundamentally enhances the radio spectral efficiency. However, cognitive radio is not only a physical layer transmission technology, but also provides intellectual challenges to form cognitive radio network by cognitive radios. It shall supply the overall networking efficiency at given radio spectrum bandwidth. This tutorial gives a complete comprehensive introduction to audience, including state-of-the-art wireless communications and natures, spectrum sensing for cognitive radio "network", cooperative communications, cognitive medium access control, network layer design issues of cognitive radio networks, trust and security, theoretical limitations, price & strategy for operators and users, and global regulations.

TU10 Multihop Cellular Networks and IEEE 802.16j: Technologies and Applications

Room: 311-B

Instructors: Hung-Yu Wei (National Taiwan University), Jarogniew Rykowski (Poznan University), T. Russell Hsing (Telcordia Technologies)

Abstract: Multihop Cellular Networks have become promising wireless networking architecture for future wireless access system. In this tutorial, we will present the multihop cellular networking architecture that integrates cellular network architecture with multihop wireless relay. The technique of augmenting cellular networks with multihop relay networks has been applied to different types of wireless network. Enhancing cellular coverage, increasing system throughput, balancing load within wireless access networks, providing flexible wireless network access are several key advantages of multihop cellular networking architecture. IEEE 802.16 WiMAX system also applies the multihop cellular design principle to its 802.16j Mobile Multihop Relay system. In this tutorial, both up-dated technologies development and potential service applications will be discussed. We will first give an technologies overview on Multihop Cellular Networks and design issues. Then IEEE 802.16j standard will be introduced. We will then discuss a few potentially killer application scenarios of using multihop cellular networks.

TU11 Peer-to-Peer Communications – Operational Aspects in Heterogeneous Networks

Room: 311-C

Instructors: Wolfgang Kellerer, Zoran Despotovic (NTT DoCoMo European); Gerald Kunzmann, Stefan Zöls (Munich University of Technology)

Abstract: Peer-to-Peer (P2P) systems can be regarded as decentralized and self organizing overlay architectures, independent of specific access networks. Self organization makes them robust and flexible to dynamic changes without provider interaction. Their main objective is to support lookup and use of distributed resources. P2P technologies have thus received an increasing interest in academia and also in

industry in different application areas not only limited to file sharing but also in communication applications such as Skype. The potential of P2P is in the realization of novel applications (user generated content, community based services) and also in applying its principles to use existing resources in a more efficient way to save infrastructure cost. After a short introduction to P2P this tutorial goes beyond basic principles by presenting advanced issues regarding operational aspects targeting heterogeneous and mobile communication networks. In particular, we cover distributed monitoring and control of key P2P system characteristics such as network size and traffic distribution and their (cost-based) control. We further elaborate on P2P overlay cooperation related aspects such as trust and reputation management, incentives and security.

TU12 Cognitive Radio Communications and Networking

Room: 302

Instructors: Zhi Tian (Michigan Technological University), Georgios B. Giannakis (University of Minnesota.)

Abstract: Radio frequency spectrum is a valuable and tightly regulated resource, but current wireless access technologies built on fixed spectrum allocation cause severe bandwidth underutilization. This scarcity-underutilization imbalance motivates the emerging paradigm of open spectrum access to provide ubiquitous wireless high-speed connectivity. Key to this paradigm are frequency-agile cognitive radios (CRs) that are aware of the radio environment and can dynamically program their parameters to efficiently utilize vacant spectrum without causing harmful interference to authorized users. Technological innovations in CR networks are anticipated to deliver unprecedented spectrum resource utilization efficiency and wireless service flexibility.

The envisioned radio agility gives rise to new technical challenges in realizing wireless radio cognition and adaptation at tractable complexity. While a key hindrance in programmable radio design has been the front-end circuit interface, the emerging open access paradigm brings up unique technical challenges to dynamically managing network resources in the presence of harsh time-varying wireless environments. Responding to the growing interest from industry, academia and government institutions, this tutorial overviews the state-of-the-art in cognitive radio networks, with emphasis on the unique features, challenges and research directions in spectrum sensing, programmable radio platforms and adaptive dynamic radio resource allocation. A by-product of the tutorial will be to enhance the interdisciplinary links among communications, signal processing, and networking research communities.

The contents of this tutorial are as follows. It first gives a brief overview on radio spectrum policies, spectrum sharing paradigms, and motivating applications for CRs. It then discusses system-level issues including the current and potential CR system frameworks and the system capacity of open access networks. The core part of this tutorial focuses on several major research issues in CR radio and network

designs, including wideband spectrum sensing, frequency-agile waveform design and adaptation, multiple access and dynamic radio resource allocation, as well as cognitive MAC design. At the end, the tutorial discusses relevant implementation issues, open problems and challenges for future research and development.

TU13 Security and Dependability of Networked Information Systems

Room: 303

Instructors: David Tipper (University of Pittsburgh), Yi Qian (USA National Institute of Standards and Technology)

Abstract: A consequence of the increased dependence on networked information systems has been the significantly heightened concerns regarding their security and dependability. In particular, the interconnections, interactions, and dependencies among networked information systems and other critical infrastructure systems can dramatically magnify the consequence of damages resulting from even simple security violations and/or faults. In this tutorial we explore the issues related to the integration of and interaction between approaches, models, architectures, etc., prevalent in the security and dependability areas. In particular, we view information assurance (IA) as a growing area that can form an umbrella to bring together the efforts in security and dependability areas, mainly because their primary goal is to provide an adequate level of assurance that the networked information systems and infrastructures can be relied upon and trusted. Furthermore, the interaction between the dependability and security is only beginning to be addressed in the research literature but is a crucial topic for successfully building IA into IT systems. The goal of this tutorial is to present a sample survey of dependability and security techniques followed by an in-depth look at how one can model these two components interacting in providing IA and what the challenges are for the assurance of emerging systems.

TU14 Beyond 3G: 3GPP Long Term Evolution, 3GPP2 Ultra Mobile Broadband, and WiMAX

Room: 306

Instructor: Hyung G. Myung (Qualcomm/Flarion Technologies), **Abstract:** The current 3rd generation cellular wireless systems are evolving into 4th generation. As a pathway to 4G, 3GPP is currently developing Long Term Evolution (LTE) standard and 3GPP2 is working on Ultra Mobile Broadband (UMB) standard. IEEE 802.16-based WiMAX is also gaining attention as a 4G solution. In terms of

air interface techniques, all three systems use OFDMA-based multicarrier modulation, MIMO, and other advanced features to greatly improve the mobile wireless services. In this tutorial, we first survey the underlying techniques of the three beyond-3G systems such as OFDMA, SC-FDMA, MIMO, fractional frequency reuse (FFR), and advanced coding. Then, we give technical overviews of 3GPP LTE, 3GPP2 UMB, and WiMAX. Specifically, we describe the system architecture, physical layer, and MAC layer of each system.

TU26 Re-engineering the Technology Acquisition Process for Product and Process Development

Room: 308

Instructors: Tariq S Durrani (University of Strathclyde), Sheila Forbes (University of Strathclyde)

Abstract: The evolution of global markets has been characterised by increased competition and rapid change. Product life cycles are becoming ever shorter, continuous process improvement is increasingly seen as the norm, and companies are placing greater emphasis on time to market considerations. In addition, globalisation of markets has lowered barriers to the transfer of technology across geographical boundaries. Technological innovation and incorporation of new technologies into products have become key competitive factors. In response, organisations have sought to improve and refine various aspects of their technology management. Thus identification, evaluation and acquisition of technologies from a variety of sources now play an important role in the effective management of technological resources. In this context, the capacity and capability for skilful acquisition, development and management of technology represents a key competitive edge to engineering organisations.

This tutorial will inform participants of the processes for successful technology acquisition. Participants will learn of optimal techniques for taking strategic decisions on the development or acquisition of technologies, through a formalised multi-stage approach. The options for acquiring technologies, for embedding in products and processes, range from (i) direct investment in technology or process development and the associated ramification on the core competencies of an organisation; (ii) technology development through external partnering or alliances and the associated issues of dependencies and reliance on partners; (iii) outright procurement and related tensions with suppliers, and other approaches. An assessment of these options will form part of the learning outcomes from the Tutorials.

Several exemplars from a variety of industrial sectors will be presented and discussed.

8:30 - 12:30 (break 10:15 - 10:45), 23 May (Friday)

TU15 IP-Oriented QoS in the Next Generation Networks: application to wireless networks

Room: 310

Instructor: Pascal Lorenz (University of Haute-Alsace)

Abstract: Emerging Internet Quality of Service (QoS) mechanisms are expected to enable wide spread use of real time services such as VoIP and videoconferencing. The "best effort" Internet delivery cannot be used for the new multimedia applications. New technologies and new standards are necessary to offer Quality of Service (QoS) for these multimedia applications. Therefore new communication architectures integrate mechanisms allowing guaranteed QoS services as well as high rate communications.

The service level agreement with a mobile Internet user is hard to satisfy, since there may not be enough resources available in some parts of the network the mobile user is moving into. The emerging Internet QoS architectures, differentiated services and integrated services, do not consider user mobility. QoS mechanisms enforce a differentiated sharing of bandwidth among services and users. Thus, there must be mechanisms available to identify traffic flows with different QoS parameters, and to make it possible to charge the users based on requested quality. The integration of fixed and mobile wireless access into IP networks presents a cost effective and efficient way to provide seamless end-to-end connectivity and ubiquitous access in a market where the demand for mobile Internet services has grown rapidly and predicted to generate billions of dollars in revenue.

This tutorial covers to the issues of QoS provisioning in heterogeneous networks and Internet access over future wireless networks as well as ATM, MPLS, DiffServ, IntServ frameworks. It discusses the characteristics of the Internet, mobility and QoS provisioning in wireless and mobile IP networks. This tutorial also covers routing, security, baseline architecture of the inter-networking protocols and end to end traffic management issues.

TU16 Dynamic Spectrum Management in Cognitive Radio Networks

Room: 311-A

Instructor: Ekram Hossain (University of Manitoba)

Abstract: Cognitive radio networks based on dynamic spectrum access will be a significant component in next generation wireless systems. It is currently of big interest to researchers and practitioners involved in the design, analysis, and optimization of next generation wireless access systems and networks. Dynamic spectrum allocation and sharing among primary and secondary users and issues related to spectrum pricing, collectively referred to as Spectrum Management, is one of the most significant components in

the design of cognitive radio systems. The objective of this tutorial is to introduce the major research challenges and discuss the possible solution approaches to the dynamic spectrum management problem in cognitive radio networks. Basic functionalities in a cognitive radio transceiver for dynamic spectrum access will be first reviewed. A survey on the medium access control protocols for cognitive radio networks will be presented. A friendly introduction to the basic game theory concepts and the important game models from microeconomic theory as well as the theory of auctions, which can be used to solve the dynamic spectrum management problem, will be provided. Applications of these models in IEEE 802.11, IEEE 802.16, and IEEE 802.22-based cognitive radio networks will be discussed.

TU17 WiMax Multimedia QoS and Radio Resource Management

Room: 311-B

Instructors: Hossam Hassanein (Queen's University), Najah Abu Ali (United Arab Emirates University)

Abstract: The explosive growth of the Internet over the last decade has led to an increasing demand for high-speed, ubiquitous Internet access. IEEE 802.16/WiMax is today's most promising new technology for broadband wireless access to IP services. Over both licensed and unlicensed spectrum, WiMax can serve a wide range of applications including data, voice, gaming, and multimedia in different environments (fixed and mobile, and single and multihop). However, WiMax is challenged by meeting strict QoS requirements of these applications over a finite radio spectrum. This implies more complex network planning and resource management and requires sound new approaches to ensuring connectivity and QoS.

The objective of this tutorial is to provide a balanced blend of WiMax's theoretical and practical aspects, along with current industrial capabilities, with the aim to shed light and press forward the work on QoS provisioning and Radio Resource Management (RRM) in WiMax networks. In this scope, network administrators and operators who are planning or operating a WiMax deployment are offered with engineering design and deployment issues to balance the requirement for service quality against operational cost, while, academics are presented with a comprehensive knowledge of the state-of-the-art RRM and QoS provisioning schemes, which are far from making optimum use of WiMax wireless resources.

We first offer an overview of the IEEE 802.16 standard in its main forms (Point-to-Multipoint, Mesh and Relay). We also describe the general requirements for RRM frameworks. We then turn our attention to RRM and QoS mechanisms and issues in PMP WiMax networks, including bandwidth allocation, traffic control and scheduling. Next, we discuss the RRM issues in WiMax mesh networks, including

scheduling, channel assignment and routing. Finally, we conclude with identifying current challenges and outstanding issues.

TU18 The Next Generation CDMA Technologies

Room: 311-C

Instructor: Hsiao-Hwa Chen (National Cheng Kung University)

Abstract: Future wireless communication systems should be operating mainly, if not completely, on high-speed burst data applications. The need to support high-speed burst traffic has already posed a great challenge to all currently available air-link technologies based on either TDMA or CDMA. The traditional CDMA technology has been applied to both 2G and 3G mobile cellular standards. However, the recent researches have suggested that it is unsuitable for high-speed burst-type wireless applications, and there are many problems with the traditional CDMA technology, such as its low spreading efficiency, interference-limited capacity and its need for precision power control, etc.

This tutorial covers various important issues on the development of next generation CDMA technologies. It includes the topics from next generation CDMA system modeling to code design methodologies, starting with the basics and progressing to more advanced topics. It contains many original research results on innovative CDMA technologies, such as complementary coded CDMA, multi-dimensional space-time-frequency coding, OFDM-CDMA architecture, etc., which will be introduced in a

step-by-step approach.

As an all-in-one tutorial on next generation CDMA technologies, it is a must for telecommunication engineers, advanced R&D personnel, undergraduate and postgraduate students, who will attend ICC 2008.

TU19 Peer-to-Peer Networking: State of the art and research challenges

Room: 303

Instructor: Raouf Boutaba (University of Waterloo)

Abstract: The past few years have witnessed the emergence of Peer-to-Peer (P2P) systems as a means to further facilitate the formation of communities of interest over the Internet in all areas of human life including technical/research, cultural, political, social, entertainment, etc. P2P technologies involve data storage, discovery and retrieval, overlay networks and application-level routing, security and reputation, measurements and management.

This tutorial will give an appreciation of the issues and state of the art in Peer-to-Peer Networking. It will introduce the underlying concepts, present existing architectures, highlight the design requirements, discuss the research issues, compare existing approaches, and illustrate the concepts through case studies. The ultimate objective is to provide the tutorial attendees with an in-depth understanding of the issues inherent to the design, deployment and operation of large-scale P2P systems.

14:00 - 18:00 (break 15:45 - 16:15), 23 May (Friday)

TU20 Automotive Networking and Telematics Applications

Room: 310

Instructors: Tao Zhang (Telcordia Technologis); Wanjiun Liao, Phone Lin (National Taiwan University)

Abstract: In the future, each automobile may serve as a mobile node in the global communications infrastructure, and many potential applications can be supported, including road safety, advanced traffic management, passenger infotainment, and resource management in transportation and telecommunications infrastructure. Significant industrial and governmental efforts have been undertaken to enhance "passive safety" to "active safety" by employing networking functions in vehicles and infrastructures. This tutorial course will describe how such a vast service and network system can be scaled, supported, and made secure, reliable and economical.

The unique features of automotive networking and telematics applications generate many interesting research interests and activities, and are expected to foster new transportation products and services. The wireless networking

among vehicles and between vehicles and the infrastructure has different characteristics from other conventional wireless networking problems. For example, due to rapidly changing topology as vehicles move around, there are resemblances to mobile ad hoc networking scenarios. However, the constraints and optimizations are very different. One such example is that power efficiency is no longer an issue for vehicle communications as it is for traditional ad hoc networking. Vehicles in general are also constrained to move within roads (and within lanes most of the time) and with higher mobility. Automotive applications also demand stringent communications performance requirements that are not seen in conventional multi-hop wireless networks.

This tutorial course is designed to address important research challenges undertaken for automotive networking and telematics applications. The focus is on network protocols, emerging communications standards, and performance modeling for active safety, telematics, and infotainment applications enabled by a vehicular-to-infrastructure and vehicle-to-vehicle wireless communications technology. Topics of interest include:

- Vehicular networking: an overview
- Vehicular network architecture and protocols
- Vehicular ad hoc network MAC, routing, and data dissemination
- Security for automotive networking
- Enabling technologies for active safety applications
- Resource management and performance modeling in vehicular networks

TU21 VoIP Security and Anti-Hacking

Room: 311-A

Instructor: Yuefei Xu (TELUS)

Abstract: VoIP (Voice over IP) is becoming one of the most widely deployed applications across Telecom industry and Enterprises. VoIP not only inherits advantages of IP technology, but also brings in new and specific security challenges. Typical security threats like Call Eavesdropping, Service Fraud, Identity Theft, DoS and Spam are significant worries to developers, subscribers, service providers and enterprises.

This tutorial will help audience to learn systematic knowledge to compete the challenges of VoIP Security by know-why and know-how. Participants will learn typical VoIP threats, attacking methods and prevention options. Advanced VoIP hacking techniques and detection tools will be demoed with analysis how to mitigate the threats. A holistic Security Framework will be introduced with TRA (Threat and Risk Assessment) analysis applied to both of consumer and enterprise environments.

TU22 Security Issues in Sensor Networks

Room: 311-B

Instructor: Yang Xiao (Micro Linear)

Abstract: Sensor networks have many applications, and security issues in some sensor applications are very important such as monitoring applications in the battle fields. Sensor networks differ from other traditional networks with many aspects such as limited energy, limited memory space, limited computation capability, etc. Therefore, sensor network security has some unique features which do not exist in other networks.

In this tutorial, we will provide an overview of the security issues and solutions of sensor networks including attacks, encryption, authentication, key managements, secure routing, secure aggregation, secure location, intrusion detection, privacy issues, security services, RFID security, Zigbee Security, lightweight ciphers, security in sensor and actuator networks, security in underwater sensor networks, etc.

TU24 Peer-To-Peer Multimedia Applications

Room: 303

Instructor: Jin Li (Microsoft)

Abstract: In both academia and industry, peer-to-peer (P2P) applications have attracted great attention. Peer-to-peer file sharing applications, such as Napster, Gnutella, Kazaa, BitTorrent, Skype and PPLive, have witnessed tremendous success among end users. And the P2P streaming applications, such as PPLive, UUSee, are on the rise. Recent statistics suggests that P2P traffic accounts for as much as 70% of Internet traffic. Unlike a client-server based system, peers bring with them serving capacity. Therefore, as the demand of a P2P system grows, the capacity of the network grows, too. This enables a P2P file sharing/streaming application to be cheap to build and superb in scalability. The purpose of the tutorial is to examine issues associated with the successful building and deployment of an efficient and reliable P2P file sharing and/or P2P streaming application. We start by examining some popular P2P applications, such as BitTorrent, Skype and PPLive. The study of these P2P applications helps us to understand the design principles of P2P applications in general. We then investigate a number of tools for building successful P2P applications, such as the overlay network, the scheduling algorithm, the erasure resilient coding, and NAT/firewall traversal. Finally, we move on to critical deployment decisions that make or break the P2P applications, such as P2P economy, security issues in P2P application, peer selection, monitoring and debugging utilities in P2P application.

TU25 Location Based Services for Mobile

Room: 305-C

Instructors: Shu Wang, Jungwon Ming, Byung K. Yi, Soonyi Kwon (LG Electronics)

Abstract: Location based services (LBS) for mobile are the services supported by cellular networks for providing mobile users with various location sensitive applications such as E911, Friendfinder, personalized advertisement, etc. LBS accelerate the convergence of 3C (computer, communication and consumer electronics). One aspect of LBS market is the rapid growth of GPS market, which is predicted to reach \$28.9 billion by 2010 by GPS World. It is believed that LBS is bringing huge revenue opportunities for wireless network operators and service providers. The driving force behind of the growth of LBS market includes regulator's mandates, the development of more efficient location technologies and the expanding of LBS from network operator to third service provider.

In this tutorial, the state of art of mobile location based services (LBS) will be explored in terms of technologies, standards and implementations. There are five major parts in this proposed tutorial. Within the first part, an introduction to LBS is presented along with an overview of the growing LBS market. Two examples of LBS, E911 and telematics, are emphasized. In the second part, LBS from a network operator perspective is discussed with a survey of wireless location technologies, the exploration of location

management in cellular network, and LBS standards activities. The architecture and operation of the network-dependent LBS control plane of cdma2000 and UMTS networks are reviewed, respectively. In the third part, the IP-based LBS user plane is discussed from a service provide perspective. An overview of the related standards by OMA and 3GPP2 is given and the principles of LBS user plane are illustrated from multiple application scenarios. In the fourth part, several implementation issues of LBS are discussed as well as development examples. In the fifth part, the security and privacy issues

of mobile LBS are discussed from an end user perspective along with related practices and regulations. Finally, the further works and standard activities for LBS are presented. In summary, this tutorial is intended to provide a comprehensive overview of mobile LBS for a wide array of audiences, including LBS services providers, application developers, marketing managers and system researchers, etc. It includes not only the background information and standards activities but also some hand-on development examples.

WORKSHOPS

Message From the Workshops Chair

On behalf of the Executive Committee of the IEEE International Conference on Communications (ICC2008), it is my great pleasure to introduce the ICC2008 Workshops program to be held in conjunction with the ICC2008 main conference. ICC2008 will be held in Beijing, China, on 19-23 May 2008 and cover a wide range of symposia in the field of communications technology. An interesting set of half-day and full-day workshops have been arranged to complement the already rich program of ICC2008. The purpose of these workshops is to provide a platform for presenting the latest technical and business issues in communications and networking topics as well as novel ideas and more specific research areas in a less formal and possibly more focused way than that presented at the main conference. Workshops are held on 19th and 23rd of May 2008.

There are three full-day and five half-day workshops in this year ICC2008. The papers included in the program of all workshops have been selected from open call-for-papers submissions, and all accepted papers have gone through a rigid peer review process based on full-paper submission. The presented workshops themselves have been selected from among over fifteen proposals, meaning that only one out of every two proposals could get into this year workshops program. Each workshop has a paper acceptance rate of around 30% to 40%. Therefore we are very confident of the quality of the workshops and the papers included in each workshop program. All papers are also included in the IEEE Xplore. The organizers of the workshops are among well-known experts from industry and academia who are well aware of important topics which require further investigation and discussions as used in the formation of the workshops programs. The workshops provide a warm interactive discussion environment among people working on a focused topic, rather than among a wider group of researchers.

The selected workshops in this year ICC2008 program are:

Monday Morning (09:00-12:30, 19 May)

- WS1 (Full-Day) *3rd IEEE Broadband Wireless Access Workshop*
- WS2 (Full-Day) *Cognitive and Cooperative Wireless Networks – COCONET'08*
- WS7 (Half-Day) *IP Mobility Management and Architecture - 2008 IPMMA*

Monday Afternoon (14:00-17:30, 19 May)

- WS1 (Full-Day) *3rd IEEE Broadband Wireless Access Workshop*
- WS2 (Full-Day) *Cognitive and Cooperative Wireless Networks – COCONET'08*
- WS6 (Half-Day) *Vehi-Mobi'08 - Vehicular Networking & Applications Workshop*

Friday Morning (09:00-12:30, 23 May)

- WS3 (Full-Day) *13th International Workshop on Computer Aided Modeling, Analysis and Design of Communication Links and Networks (CAMAD 2008)*
- WS5 (Half-Day) *Cooperative Communications and Networking: Theory, Practice, and Applications*
- WS4 (Half-Day) *Digital Television and Mobile Multimedia Broadcasting*

Friday Afternoon (14:00-17:30, 23 May)

- WS3 (Full-Day) *13th International IWorkshop on Computer Aided Modeling, Analysis and Design of Communication Links and Networks (CAMAD 2008)*
- WS8 (Half-Day) *Towards Cognition in Wireless Networks - IEEE CogNet*

We hope that you find the program of this year workshops to your satisfactory needs for your R&D activities.

Abbas Jamalipour and Jian Ma
ICC2008, Workshops Chairs

Mon, 19 May 2008, 8:30-18:00
Room 305-B, BICC

WS1: 3rd IEEE Broadband Wireless Access Workshop

General Chairs:

Thomas Michael Bohnert, University of Coimbra
Dmitri Moltchanov, Tampere University of Technology

Co-Chairs:

Edmundo Monteiro, University of Coimbra
Yevgeni Koucheryavy, Tampere University of Technology

TPC Chairs:

Dirk Staehle, University of Wuerzburg
Gabor Fodor, Ericsson Research

Description:

Broadband Wireless Access (BWA) technologies are becoming extremely important and vendors and standardization bodies respond to this development with new and powerful BWA technologies. Supporting transmission rates up to several megabits per second at distances far as tens of kilometers while providing full mobility support, these technologies provide the long-awaited means for delivering any telecommunication service over the Internet. This workshop brings together and provides an international forum for the research community. The workshop program covers various aspects of related technologies.

List of Technical Papers:

Two-Dimensional Resource Allocation for OFDMA System
Ting Wang, Hui Feng, Bo Hu, Fudan University

Performance Analysis of Multi-hop MIMO Relay Network
Yiling Wang, Fuqiang Liu, Shangzhi Xu, Xinhong Wang, Yeqing Qian, Ping Wang, Tongji University

Radio Resource Allocation Algorithm for the Uplink OFDMA System
Juncai Shi, Aiqun Hu, Department of Radio Engineering, Southeast University

cdma2000 Highly Detectable Pilot
Qiang Wu, Wanlun Zhao, Peter Black, Yeliz Tokgoz, Roberto Padovani, Qualcomm

Decomposition Proportional Fairness Algorithm for Multiuser OFDM Systems
Lili Zhang, Cihang Jin, USTC; Wuyang Zhou, USTC

MIMO Amplify-and-Forward Relaying: Spatial Gain and Filter Matrix Design
Qingyu Miao, Beijing University of Posts Telecommunications; Afif Osseiran, Jiansong Gan, Ericsson Research

Capacity and Coverage Analysis of a 3GPP-LTE Multihop Deployment Scenario
Rainer Schoenen, RWTH Aachen; Wolfgang Zirwas, NSN

Neighbor Cell Relation List and Physical Cell Identity Self-Organization in LTE
Kristina Zetterberg, Mehdi Amirijoo, Pål Frenger, Fredrik Gunnarsson, Harald Kallin, Johan Moe, Ericsson Research

Criteria on Utility Designing of Convex Optimization in FDMA Networks

Zheng Sun, Wenjun Xu, Zhiqiang He, Kai Niu, Beijing University of Posts and Telecommunications

TCP-Friendly Congestion Control for Streaming Video Service over Wireless Overlay Network
Jae-Young Pyun, Ho-Jin Choi, Chosun University

MMSE-FDE based on Estimated SNR for Single-Carrier Block Transmission (SCBT) in Multi-Gbps WPAN (IEEE 802.15.3c)

Ming Lei, National Institute of Information Communications Technology (NICT); Ismail Lakkis, Tensorcom Inc.; Hiroshi Harada, Shuzo Kato, National Institute of Information and Communications Technology (NICT)

Low-Complexity Detection by Exploiting Suboptimal Detection Order and Subcarrier Grouping for Multi-Layer MIMO-OFDM

Ming Lei, National Institute of Information and Communications Technology (NICT)

Co-channel Interference Cancellation in Multihop Relay Networks

Ahmed Abdelsalam Ahmed, Ian Marsland, Carleton University

Analysis of a Multiple-Token Contention Scheme for Broadband Wireless Access Networks

Norrarat Wattanamongkhon, Warakorn Srichavengsup, Puttipan Vara-urairat, Chulalongkorn University; Siwaruk Siwamogsatham, National Electronics Computer Technology Center; Lunchakorn Wuttisiittikulij, Chulalongkorn University

Delay and Throughput Analysis of IEEE 802.11s Networks
Ming-Xin Hu, Beijing University of Posts Telecommunications; Geng-Sheng (G.S.) Kuo, National Chengchi University

Mon, 19 May 2008, 8:30-18:00
Room 305-C, BICC

WS2: Cognitive and Cooperative Wireless Networks – COCONET'08

Organizing Committee:

Frank H.P. Fitzek (Workshop Chair), Aalborg University
Marcos D. Katz (Workshop Co-Chair), VTT
W. Chen (Workshop Co-Chair), Tsinghua University
Q. Zhang (Workshop Co-Chair), Hong Kong University of Science and Technology

Description:

The scope of this workshop is to bring together a highly qualified group of people with interest in cognitive and cooperative wireless networks. Both, cognition and cooperation are becoming major subjects of research in the wireless communication community as they have been identified as some of the underlying principles for future wireless communication systems. Cognition is exploited as a mean to use the wireless communication systems more efficiently and not limited to spectrum sensing and management only. Cooperation, altruistic or non-altruistic, is the basis to break up the cellular concept and enrich it by multi hop, peer-to-peer, or grid functionalities. The workshop will highlight the newest trends in this emerging area, complementing it with first

practical implementations and demonstrations in this field. Besides the technical insights, the workshop will encourage the participants to discuss among each other.

List of Technical Papers:

Exact Outage Probability of Cooperative Diversity with Opportunistic Spectrum Access

Himal Suraweera, Victoria University; Peter Smith, University of Canterbury; Nusrat Surobhi, Victoria University

Asymmetrical Modulation for Uplink Communication in Cooperative Networks

Qi Zhang, Technical University of Denmark; Frank H.P. Fitzek, Aalborg University; Villy B. Iversen, Technical University of Denmark

Implementation and Performance Evaluation of Network Coding for Cooperative Mobile Devices

Morten V. Pedersen, Frank Fitzek, Torben Larsen, Aalborg University

Optimum power allocation in a hierarchical spectrum sharing scheme

Zafer Beyaztas, Ashish Pandharipande, Philips Research Laboratories; David Gesbert, Institut Eurecom

Analyzing the Concept of Involving Low End Devices in a Cooperative Network

Peter Ekler, Hassan Charaf, Budapest University of Technology and Economics

Evolutionary Game Theoretical Approach for IR-UWB Sensor Networks

Maria Perez-Guirao, University of Hanover; Ralf Lübben, University of Göttingen; Thomas Kaiser, Klaus Jobmann, University of Hanover

A Cost-Quality Tradeoff in Cooperative Sensor Networking

Eyuphan Bulut, Zijian Wang, Boleslaw Szymanski, Rensselaer Polytechnic Institute

Applying User Profiles in Transient Peer-to-Peer Environment

Bertalan Forstner, Imre Kelényi, Hassan Charaf, Budapest University of Technology and Economics

Swarm Intelligence Based Dynamic Control Channel Assignment in CogMesh

Tao Chen, VTT; Honggang Zhang, Zhejiang University; Marcos Katz, VTT; Zheng Zhou, BUPT

Enabling partial forwarding by decoding-based one and two-stage selective cooperation

Stefan Valentin, Tobias Volkhausen, University of Paderborn; Furuzan Atay Onat, Halim Yanikomeroglu, Carleton University; Holger Karl, University of Paderborn

Cooperation Incentives and Enablers for Wireless Peers in Heterogeneous Networks

Olli Karonen, Jukka K. Nurminen, Nokia Research Center

High Order Geometric Range Free Localization in Opportunistic Cognitive Sensor Networks

Dian Gong, University of California, Riverside; Zhiyao Ma, Tsinghua University; Yunfan Li, Wei Chen, Zhigang Cao, University of California, Riverside

Implementation of Cooperative Information Storage on Distributed Sensor Boards

Anders Grauballe, Mikkel Gade Jensen, Achuthan Paramanathan, Tatiana K. Madsen, Frank Fitzek, Aalborg University

Localization Information Retrieval Exploiting Cooperation Among Mobile Devices

Chiara Sammarco, Frank Fitzek, Gian Paolo Perrucci, Aalborg University; Antonio Iera, Antonella Mollinaro, Università di Reggio Calabria

Autoregressive Spectrum Hole Prediction Model for Cognitive Radio Systems

Zhigang Wen, Tao Luo, Beijing University of Posts and Telecommunications; Weidong Xiang, Sudhan Majhi, University of Michigan, Dearborn; Yunhong Ma, Northwestern Polytechnical University

Preventing Natural and Malicious Network Partition in Ad hoc networks Using Cooperative Healing Cell

Chen Huang, Furong Wang, Benxiong Huang, Yijun Mo, Huazhong University of Science and Technology

Energy Aspects of Peer Cooperation – Measurements with a Mobile DHT System

Imre Kelényi, Budapest University of Technology Economics; Jukka K. Nurminen, Nokia Research Center

Utilizing Tracking Data in RFID-Equipped Warehouses

Zsolt Berenyi, Hassan Charaf, Budapest University of Technology and Economics

Investigation of Cooperative Relay Node Selection in Heterogeneous Wireless Communication Systems

Mugen Peng, Wenbo Wang, Beijing University of Posts and Telecommunications

Fri, 23 May 2008, 8:30-18:00

Room 305-B, BICC

WS3: 13th International Workshop on Computer Aided Modeling, Analysis and Design of Communication Links and Networks (CAMAD 2008)

General Chair:

Changcheng Huang, Carleton University

Technical Program Co-Chairs:

Fabrizio Granelli, University of Trento

Jie Li, University of Tsukuba

Description:

The 13th International Workshop on Computer-Aided Modeling, Analysis and Design of Communication Links and Networks (CAMAD) is a unique forum that brings together major experts around the globe on modeling and simulation of communications systems. The workshop was held once every two years, often in cooperation with flagship IEEE Communication Society conferences (International Conference on Communications, Global Telecommunication Conference). CAMAD'04 was held in conjunction with Globecom2004 in Dallas, TX, on Nov.29th, 2004, while CAMAD'06 was held as a standalone event in June 2006, Trento, Italy. CAMAD'07 was held again in conjunction with a major conference, PIMRC

2007, Athens, Greece, Sept. 2007.

List of Technical Papers:

Wavelength-group-based Optical Virtual Concatenation Technique for Data-intensive and Latency-sensitive Applications

Yongmei Sun, Takashi Ono, Atsushi Takada, Masahito Tomizawa, NTT Network Innovation Laboratories

EasiSim: A Scalable Simulation Platform for Wireless Sensor Networks

Haiming Chen, Li Cui, He Zhu, Chinese Academy of Sciences; Changcheng Huang, Carleton University

Distributed Coordinate-free Hole Recovery

Xiaoyun Li, David Hunter, University of Essex

Simplifying Network Management with Fuzzy Logic

Shaleeza Sohail, Aasia Khanum, College of E & ME, NUST, Rawalpindi

A Novel QoS in Node-Disjoint Routing for Ad Hoc Networks

Luo Liu, Laurie Cuthbert, Queen Mary, University of London

IP over WDM module for the NS-2 Simulator

André C. Drummond, Renato T. R. da Silva, Sávio R. A. dos Santos Rosa, Nelson L. S. da Fonseca, State University of Campinas

Dynamic Features Measurement and Analysis for Large-Scale Networks

Tao Qin, Xiaohong Guan, Wei Li, Pinghui Wang, Xian JiaoTong University

On Per-Flow Fairness and Scheduling in Wireless Multihop Networks

Dimitrios Vergados, National Technical University of Athens; Dimitrios Vergados, University of Piraeus; Aggeliki Sgora, University of the Aegean

Geographical Information Based Clustering Algorithm to Equalize Cluster Lifetime throughout Wireless Sensor Networks

Dali Wei, H Anthony Chan, Shaun Kaplan, University of CapeTown

Empowering Grids with Flexibility to Cope with Uncertainties

Daniel M. Batista, Nelson L. S. da Fonseca, State University of Campinas

Performance Analysis of Discrete-time Autoregressive Queueing Systems

Dieter Fiems, Dieter Claeys, Herwig Bruneel, Ghent University

Energy Efficient Clustering Algorithms for Wireless Sensor Networks

Dali Wei, Shaun Kaplan, H Anthony Chan, University of Cape Town

Distributed Protocol Stacks: A Framework for Balancing Interoperability and Optimization

Dzmitry Kliazovich, Fabrizio Granelli, University of Trento

Performance Analysis of IEEE 802.11-based Ad Hoc Networks Using Game Theory

Chunfeng Liu, Yantai Shu, Tianjin University; Oliver Yang, University of Ottawa

A New NS2 Simulation Module for Bandwidth Constraints Models in DS-TE Networks

Davide Adami, CNIT-University of Pisa; Christian Callegari, Stefano Giordano, Michele Pagano, University of Pisa

OBS Simulation Tools: A Comparative Study

Vasco Soares, Polytechnic Institute of Castelo Branco; Iúri Veiga, University of Beira Interior; Joel Rodrigues, Institute of Telecommunications/University of Beira Interior

A Cache Based Session Setup Mechanism for IMS

Yufei Cao, Jianxin Liao, Qi Qi, Xiaomin Zhu, Beijing University of Posts and Telecommunications

Fri, 23 May 2008, 8:30-12:00

Room 305-C, BICC

WS4: Digital Television and Mobile Multimedia Broadcasting

Workshop Co-Chairs:

Yiyan Wu, Communications Research Centre

Jian Song, Tsinghua University

Description:

Broadcasting of digital television (DTV) and mobile multimedia has been a very exciting topic in the world for years. Since DTV and high definition television (HDTV) services empowered by the advanced digital broadcasting technologies have successfully brought billions of customers the excellent watching experience never realized before from watching analog TV, it is a fast emerging area with huge economic impact. The objective of this workshop is to present the state-of-the-art research results contributing to DTV or the mobile multimedia broadcasting. This activity is also supported by IEEE Broadcast Technology Society (BTS) Beijing Chapter.

List of Technical Papers:

A Low Complexity Timing Synchronization Algorithm for DTMB Standard

Chao Zhang, Xiao Lin Zhang, Shuai Zhang, Beijing University of Aeronautics & Astronautics

Radio Resource Management for Broadcast Services in OFDMA-Based Networks

Patrick Hosein, Thawatt Gopal, Huawei Technologies

Supporting Scalable Multimedia Streaming over Converged DVB-H and DTMB Networks

Hongfei Du, Nicola Conci, CREATE-NET; Norman Hendrich, University of Hamburg

H.264 Frame Layer Rate Control Based on Block Histogram Difference

Tian Lan, Xuemai Gu, Harbin Institute of Technology

Channel Estimation for the Chinese DTTB System Based on a Novel Iterative PN Sequence Reconstruction

Fang Yang, Jintao Wang, Jun Wang, Jian Song, Zhixing Yang, Tsinghua University

User-centric Utility-based Data Replication in Heterogeneous Networks

Seung-Bum Lee, Performance Engineering Laboratory & Centre for Digital Video Processing; Gabriel-Miro Muntean, Performance Engineering Laboratory; Alan F. Smeaton, Centre for Digital Video Processing

Fri, 23 May 2008, 8:30-12:00
Room 305-A, BICC

WS5: Cooperative Communications and Networking: Theory, Practice, and Applications

Workshop Co-Chairs:

Sastri Kota, Harris Corporation

Qinqing Zhang, Johns Hopkins University

Vincent Lau, Hong Kong University of Science & Technology

Description:

Cooperative communications and networking for wireless systems has recently attracted enormous attention. Unlike conventional point-to-point communications, cooperative communications and networking offers tremendous advantages such as allowing users or nodes to share resource to create collaboration through distributed transmission and processing. Cooperative communication and networking is a new paradigm offering significant reliability and spectral efficiency gains in wireless systems. It realizes a new form of cooperative diversity to combat the hostile wireless fading channels. The objective of this workshop are (1) to bring together experts and researchers from the International research community from Asia Pacific, North America and Europe, (2) business leader to address the market potential and emerging applications and services, and (3) the engineers from the wireless telecommunication vendors and service providers to enhance the understanding of the promising (but yet challenging) paradigm and deployment practices of cooperative networking.

List of Technical Papers:

Spectral Efficient Half Duplex Relaying for Fountain Code with Wireless Network Coding

Harya Wicaksana, See Ho Ting, Yong Liang Guan, Nanyang Technological University

Achievable Sum-Rate Maximizing AF Relay Beamforming Scheme in Two-Way Relay Channels

Namyoon Lee, Hyun Jong Yang, Joohwan Chun, KAIST

A Distributed Cooperative Target Tracking with Binary Sensor Networks

Zijian Wang, Eyuphan Bulut, Boleslaw Szymanski, Rensselaer Polytechnic Institute

A Distributed Merge and Split Algorithm for Fair Cooperation in Wireless Networks

Walid Saad, UniK University Graduate Center- University of Oslo; Zhu Han, Boise State University; Merouane Debbah, SUPELEC; Are Hjørungnes, University of Oslo

Improving Network Reachability and Data Rate in Tactical Wireless Networks via Collaborative Communications

Reza Ghanadan, Kyle Guan, Dominic Imbrenda, Shaomin (Sam) Mo, Jessica Hsu, BAE Systems

Performance Analysis of an ARQ Initialized Cooperative Communication Protocol in Shadowed Nakagami-m Wireless Channel

Irfan Ahmed, Mugen Peng, Wenbo Wang, Beijing University of Posts and Telecommunications

Cooperative Spectrum Access for Cognitive Radio Network Employing Rateless Code

Yan Chen, Hui Huang, Zhaoyang Zhang, Zhejiang University; Vincent Lau, Hong Kong University of Science and Technology; Peiliang Qiu, Zhejiang University

A Practical Implementation of an Improved Packet Combining Scheme for Wireless Sensor Networks

Damien O'Rourke, Conor Brennan, Dublin City University

Performance Analysis of Multiuser Diversity in Multiuser Two-Hop Cooperative Relay Wireless Networks

Xing Zhang, Chao Yang, Shuping Chen, Yong Li, Wenbo Wang, BUPT

Realistic Evaluation of Cooperative Relaying Networks Using Decentralized Distributed Space-Time Block Coding

Justin Yackoski, Lu Zhang, Bo Gui, Chien-Chung Shen, Leonard Cimini, University of Delaware

Single and Multiple Relay Selection Schemes and Their Diversity Orders

Yindi Jing, Hamid Jafarkhani, University of California, Irvine

Cooperative Relaying with Pragmatic Space-Time Codes

Andrea Conti, Velio Tralli, Univ. of Ferrara; Marco Chiani, Univ. of Bologna

An Improved Network Coding-based Cooperative Content Distribution Scheme

Shaoguo Tao, Jiaqing Huang, Zongkai Yang, Wenqing Cheng, Wei Liu, Huazhong University of Science and Technology

Moments of Harmonic Mean and Rate Analysis for Two-Way Amplify-and-Forward Relaying

Yang Han, See Ho Ting, Nanyang Technological University; Chin Keong Ho, Woon Hau Chin, Institute for Infocomm Research

Mon, 19 May 2008, 14:00-18:00

Room 305-A, BICC

WS6: Vehi-Mobi'08 - Vehicular Networking & Applications Workshop

General Chairs:

C.K. Toh, University of Hong Kong

Russell Hsing, Telcordia Technologies

TPC Chairs:

Daniel Wong, Malaysia University of Science and Technology

Subir Biswas, Michigan State University

Description:

Vehicular communication networks have recently been gaining significant popularity and importance, primarily to cater to the emerging services involving road safety and a need for

data-on-move. New technical challenges have evolved that demand research and investigations. Car industries are of great importance in Asia and the rest of the world. Car makers from Japan, China, Korea, and India will be key players in car telematics. Much research remain to be done to bring alive the vision of future intelligent inter-vehicular applications, which will be supported by Car-to-Car communications and networks. This workshop serves as a forum and intends to bring together researchers and engineers from both academia and industry to exchange ideas, share research experiences, and report original work in all aspects of vehicular communications, sensors, networks, computing and applications.

List of Technical Papers:

CityMob: a mobility model pattern generator for VANETs

Pietro Manzoni, Universidad Politecnica de Valencia; Francisco Martinez, University of Zaragoza; Juan Carlos Cano, Carlos Calafate, Universidad Politecnica de Valencia

V2V Wireless Communication Protocol for Rear-End Collision Avoidance on Highways

Fei Ye, Matthew Adams, Sumit Roy, University of Washington

Secure Firmware Updates over the Air in Intelligent Vehicles

Dennis K. Nilsson, Ulf E. Larson, Chalmers University of Technology

On Scheduling of Data Dissemination in Vehicular Networks with Mesh Backhaul

Zhongyi Liu, Bin Liu, Tong Zhao, Wei Yan, Peking University

Scheduling Algorithms for Simultaneous Software Updates of Electronic Devices in Vehicles

Jörg Sommer, University of Stuttgart; Volker Feil, Enrique Adeva Sanz, Daimler AG

Abiding Geocast for Warning Message Dissemination in Vehicular Ad Hoc Networks

Qiangyuan Yu, Jilin University; Geert Heijenk, University of Twente

Performance Improvement of the DSRC System Using a Novel S and π -Decision Demapper

Jeich Mar, Chi-Cheng Kuo, Yuan-Ze University

Position-based Adaptive Broadcast for Inter-Vehicle Communications

Yao-Tsung Yang, Li-Der Chou, National Central University

Mon, 19 May 2008, 8:30-12:00
Room 305-A, BICC

WS7: IP Mobility Management and Architecture - 2008 IPMMA

Program Co-Chairs:

Bill Huang, China Mobile

Ziqiang Hou, Institute of Acoustics, CAS

Sajal Das, University of Texas at Arlington

Description:

With recently, various kinds of IP mobility management solutions have been widely adopted by many wireless

communication standard bodies such as WiMax forum, 3GPP, 3GPP2 etc. Most adopted solutions are point to point connection which is similar to traditional circuit-switched architecture. Handover among heterogeneous networks with different wireless links is standardized by different incompatible mobility management technologies. Designing next generation IP mobility management and architecture on the scenarios, such as next generation wireless communication evolution, ad hoc subscriber grouping, and peer to peer Internet network architecture seems to be a timely request and will influence all kinds of operator's network architectures. Many technologies are under development. "IP Mobility Management and Architecture" workshop covers in-depth discussion on the above topics.

List of Technical Papers:

Hybrid Robust Header Compression in Proxy Mobile IPv6 over Wireless Mesh Networks

Sangheon Park, Korea University; Joo-Chul Lee, Jung-Soo Park, Electronics and Telecommunications Research Institute

Analysis of Handover Latency for Mobile IPv6 and mSCTP

Dong Phil Kim, Seok Joo Koh, Kyungpook National University

P-HIP: Paging Extensions for Host Identity Protocol

Shuigen Yang, Yajuan Qin, Hongbin Luo, Hongke Zhang, Beijing Jiaotong University

Micro-HIP A HIP-based Micro-Mobility Solution

Joseph Yick Hon So, Jidong Wang, RMIT University

Balanced Topology Constructions in the NEMO

Long-Sheng Li, Li-Keng Kang, National Chiayi University

Optimized Mobile MPLS

Shengling Wang, Xi'an Jiaotong University; Yong Cui, Tsinghua University; Sajal Das, UT Arlington; Mingwei Xu, Tsinghua University

An Architecture for Resource Management in IMS Wireless Access Networks

John W. Floroiu, Marius Iulian Corici, Stefan Arbanowski, Fokus Fraunhofer Institute; Byoung-Joon Lee, Suwon Lee, Xiaoyu Liu, Samsung Advanced Institute for Technology

A Novel Interfacing Solution to Make IKEv2 Work in MIPv6 Environment

Ke Xu, Minpeng Qi, Haitao Li, Tsinghua University; Peng Yang, Hitachi (China) R&D Corporation; Hui Deng, China Mobile Corporation

Using NEMO to Extend the Functionality of MANETs

Ben McCarthy, Christopher Edwards, Martin Dunmore, Lancaster University

Fri, 23 May 2008, 14:00-18:00
Room 305-A, BICC

WS8: Towards Cognition in Wireless Networks - IEEE CogNet

Organizing Committee:

Ignas Niemegeers (General Chairperson), Delft University of Technology

Joseph Evans (Vice General Chairperson), University of

Kansas

R. Venkatesha Prasad (TPC Chairperson), Delft University of Technology

Petri Mahonen (TPC Vice-Chairperson), RWTH Aachen

Description:

Recently we have been witnessing an unbounded growth in communication technology; in particular wireless devices have been proliferating. There is a serious demand for spectrum to support the communication needs of all these devices. At the same time, many researchers are developing methodologies to sieve the unused spectrum. There are already many solutions proposed under the 'Cognitive Radio' (CR) umbrella that address this issue. The efforts by IEEE 1900 Working Group and various researchers are blazing a trail in the direction of intelligently using the spectrum available locally for communication needs, making Cognitive Radio Networking (CRN) one of the promising candidates for future communication. They are usually in terms of architecture, sensing, optimization, resource allocation, cross layer issues, etc. However, an end user requires a system that is capable of intelligently finding and handling the available frequency band without any compromise on the QoS. Thus there is a need for the community to look at the whole issue holistically such that these solutions, results and proposals can lead to the rapid deployment of Cognitive Radio. The workshop aims to bring in together both long-term academic and shorter term industrial viewpoints on this emerging topic.

List of Technical Papers:

A coordinated distributed scheme for cognitive radio based IEEE 802.22 wireless mesh networks

Shamik Sengupta, Stevens Institute of Technology; Mainak Chatterjee, UCF; Rajarathnam Chandramouli, Stevens Institute of Technology

Adaptive Multiple Time-Scale Power Allocation for Spectrum Sharing in DS-CDMA Networks

Mohammad Khoshkholgh, Keivan Navaie, Tarbiat Modares University; Halim Yanikomeroglu, Carleton University

The Impact of Inaccurate Sensing Information in Cognitive Wireless Personal Area Networks

Jelena Masic, Vojislav B. Masic, University of Manitoba

Randomized Multi-user Strategy for Spectrum Sharing in Opportunistic Spectrum Access Network

Zhongliang Liang, Wei Liu, Pan Zhou, Feng Gao, Huazhong University of Science and Technology

Outage Probability Minimization under Both The Transmit and Interference Power Constraints for Fading Channels in Cognitive Radio Networks

Xin Kang, National University of Singapore; Ying-Chang Liang, Institute for Infocomm Research, A*STAR; Hari Krishna Garg, National University of Singapore

Cooperation and Learning in Multiuser Opportunistic Spectrum Access

Hua Liu, Bhaskar Krishnamachari, University of Southern California; Qing Zhao, University of California at Davis

Cognitive Radio Testbed: Exploiting Limited Feedback in Tomorrow's Wireless Communication Networks

Christian Sokolowski, Marina Petrova, Alexre de Baynast, Petri Mahonen, RWTH Aachen University

A Cognitive Radio Receiver Supporting Wide-Band Sensing

Volker Blaschke, Tobias Renk, Friedrich K. Jondral, Universität Karlsruhe (TH)

Modified Chirp Waveforms in Cognitive UWB System

Hanbing Shen, Weihua Zhang, Kyungsup Kwak, UWB Research Center, Inha Univ.

Use of Dedicated Broadband Sensing Receiver in Cognitive Radio

Hassan Zamat, IBM; Balasubramaniam Natarajan, Kansas State University

Improved Consecutive Mean Excision Algorithm Based Spectrum Sensing for Dynamic Spectrum Access

Bin Shen, Kyungsup Kwak, School of IT & Telecom, Inha University; Longyang Huang, Zheng Zhou, Beijing University of Posts & Telecommunications

Cognitive Spectrum Access for Underwater Acoustic Communications

Nicola Baldo, Paolo Casari, Michele Zorzi, University of Padova

Denial-of-Service Attacks on Dynamic Spectrum Access Networks

Goce Jakimoski, Koduvayur Subbalakshmi, Stevens Institute of Technology

Intelligent Multi-Path Selection Based on Parameters Prediction

Suyang Ju, Joseph Evans, University of Kansas

TECHNICAL SYMPOSIA

Advances in Networks and Internet Symposium

Tue, 20 May 2008, 14:00-15:45

Room 201-A, BICC

AN01: High speed and parallel processing for routers

Chair: **Yu Cheng**, Illinois Institute of Technology

AN01-1 Practical Stability and Bounds of Heterogeneous AIMD/RED System with Time Delay

Lijun Wang, University of Waterloo; Lin Cai, University of Victoria; Xinzhi Liu, Xuemin (Sherman) Shen, University of Waterloo

AN01-2 Performance Modelling of Random Early Detection Based Congestion Control for Multi-Class Self-Similar Network Traffic

Geyong Min, Xiaolong Jin, University of Bradford

AN01-3 TCP Adaptive Westwood - Combining TCP Westwood and Adaptive Reno A Safe Congestion Control Proposal

Cesar Marcondes, M.Y. Sanadidi, Mario Gerla, UCLA; Hideyuki Shimonishi, NEC Corporation

AN01-4 An Algorithm for Adapting RED Parameters to TCP Traffic

Wu Chen, Shuang-Hua Yang, Loughborough University

AN01-5 PC-RED for IPv6: Algorithm and Performance Analysis

Yunqiu Li, Shuang-Hua Yang, Loughborough University

AN01-6 Managing network congestion with a Kohonen-based RED queue

Emmanuel Lochin, Université de Toulouse - ISAE; Bruno Talavera, Pierre and Marie Curie University

Tue, 20 May 2008, 16:15-18:00

Room 201-A, BICC

AN02: Peer-to-peer networking

Chair: **Hui Zhang**, NEC Labs America

AN02-1 Topology Affects the Efficiency of Network Coding in Peer-to-Peer Networks

Tara Small, Baochun Li, Ben Liang, University of Toronto

AN02-2 A Novel Peer Grouping Scheme for P2P File Distribution Networks

Lingjun Ma, The University of Hong Kong; Xiaolei Wang, Zhejiang University; King-Shan Lui, The University of Hong Kong

AN02-3 Swifter: Chunked Network Coding for Peer-to-Peer Content Distribution

Jinbiao Xu, Jin Zhao, Xin Wang, Xiangyang Xue, Fudan University

AN02-4 Designing File Replication Schemes for Peer-to-Peer File Sharing Systems

Jian Ni, Yale University; Jie Lin, Steven Harrington, Naveen Sharma, Xerox

AN02-5 Broadcast Scheduling for a P2P Spanning Tree

Jeng-Wei Lin, Tunghai University

AN02-6 Plover: A Proactive Low-overhead File Replication Scheme for Structured P2P Systems

Haiying Shen, University of Arkansas

Wed, 21 May 2008, 8:30-10:15

Room 201-A, BICC

AN03: Traffic Engineering I

Chair: **Haiying Shen**, University of Arkansas

AN03-1 Enabling Information Confidentiality in Publish/Subscribe Overlay Services

Hui Zhang, NEC Labs America; Abhishek Sharma, University of Southern California; Guofei Jiang, Haifeng Chen, Xiaoqiao Meng, Kenji Yoshihira, NEC Labs America

AN03-2 Localization of IP Links Faults Using Overlay Measurements

Mohammad Fraiwan, Manimaran Govindarasu, Iowa State University

AN03-3 A Distributed Virtual Network Mapping Algorithm

Ines Houidi, Wajdi Louati, Djamel Zeglache, Telecom & Management SudParis

AN03-4 Intelligent Message Scheduling in Application Oriented Networking Systems

Jingnan Yao, Jianxun Jason Ding, Cisco Systems; Laxmi Bhuyan, University of California, Riverside

AN03-5 Multicast with an Application-Oriented Networking (AON) Approach

Xiaohua Tian, Yu Cheng, Kui Ren, Illinois Institute of Technology; Bin Liu, Tsinghua University

AN03-6 Analysis of the Scalability of the Overlay Skype System

Paolo Giacomazzi, Politecnico di Milano; Giuseppe Caizzone, Antonio Corghi, Mirco Nonnoi, ICT Consulting

Wed, 21 May 2008, 10:45-12:30

Room 201-A, BICC

AN04: Emerging services

Chair: **Jason Ding**, Cisco Systems

AN04-1 Input- and Output-Based Shared-Memory Crosspoint-Buffered Packet Switches for Multicast Traffic Switching and Replication

Ziqian Dong, Roberto Rojas-Cessa, New Jersey Institute of Technology

AN04-2 A Load Balancing Scheme for Birkhoff-von Neumann Input-Queued Switches

Hyoung-Il Lee, The Korean Intellectual Property Office; Seung-Woo Seo, Seoul National University

AN04-3 Module-First Matching Schemes for Scalable Input-Queued Space-Space-Space Clos-Network PacketSwitches

Chuan-Bi Lin, Roberto Rojas-Cessa, New Jersey Institute of Technology

AN04-4 Performance Modeling of a Reconfigurable Shared Buffer for High-Speed Switch/Router

Cheng Li, Ling Wu, Memorial University of Newfoundland

AN04-5 Per-flow Re-sequencing in Load-Balanced Switches by Using Dynamic Mailbox Sharing

Hong Cheng, Yaohui Jin, Shanghai Jiao Tong University; Nirwan Ansari, NJIT

AN04-6 Improving label space usage for Ethernet Label Switched Paths

Luis F. Caro, University of Girona; Dimitri Papadimitriou, Alcatel-Lucent Bell; Jose L. Marzo, University of Girona

Wed, 21 May 2008, 14:00-15:45

Room 201-A, BICC

AN05: Routing

Chair: **Gaogang Xie**, Chinese Academy of Sciences

AN05-1 Design of a Cluster-Based Web Server with Proportional Connection Delay Guarantee

Ka Ho Chan, Xiaowen Chu, Hong Kong Baptist University

AN05-2 Reconfigurable Optical Backhaul and Integrated Routing Algorithm for Load Balancing in Hybrid Optical-Wireless Access Networks

Wei-Tao Shaw, Shing-Wa Wong, Ning Chen, Koussalya Balasubramanian, Stanford Univ; Chunming Qiao, SUNY Buffalo; She-Hwa Yen, Queen's University; Leonid Kazovsky, Stanford University

AN05-3 A Case for Convergence Enhanced Ethernet: Requirements and Applications

Michael Ko, Daniel Eisenhauer, Renato Recio, IBM

AN05-4 Stability Oriented Overlay Multicast for Multimedia Streaming in Multiple Source Context

Thilmee M. Baduge, Kazushi Ikeda, Hirozumi Yamaguchi, Teruo Higashino, Osaka University

AN05-5 A Markov Model of Server to Client IP traffic in First Person Shooter Games

Philip Branch, Antonio Cricenti, Grenville Armitage, Swinburne University of Technology

AN05-6 Evading User-Specific Offensive Web Pages via Large-Scale Collaborations

Mingwei Xu, Tsinghua University; Qinghua Li, Pennsylvania State University; XueZhi Jiang, Yong Cui, Tsinghua University

Wed, 21 May 2008, 16:15-18:00

Room 201-A, BICC

AN06: Application Oriented Overlay

Chair: **Joel Rodrigues**, University of Beira Interior

AN06-1 To Automate or Not to Automate: On the Complexity of Network Configuration

Sihyung Lee, Tina Wong, Hyong Kim, CMU

AN06-2 Improving Route Diversity through the Design of iBGP Topologies

Cristel Pelsser, Tomonori Takeda, Eiji Oki, Kohei Shiimoto, NTT Corporation

AN06-3 AT: an Origin Verification Mechanism based on Assignment Track for Securing BGP

Na Wang, Yingjian Zhi, Binqiang Wang, Information Engineering University

AN06-4 Quality-of-Service Routing with Two Concave Constraints

Ka-Chung Leung, King-Shan Lui, Ka-Cheong Leung, Univ. of Hong Kong; Fred Baker, Cisco Research Center

AN06-5 Study on Traffic Characteristics of BGP Misconfiguration

Huan Xiong, Ming Chen, PLA University of Science and Technology

AN06-6 RLM: Reliable and Locality-aware Membership Protocol for Heterogeneous P2P Systems

Zhenyu Li, Zengyang Zhu, Gaogang Xie, Zhongcheng Li, Chinese Academy of Sciences

Thu, 22 May 2008, 8:30-10:15

Room 201-A, BICC

AN07: Traffic engineering II

Chair: **Abdelhamid Mellouk**, University Paris 12

AN07-1 cmpSCTP: An Extension of SCTP to Support Concurrent Multi-path Transfer

Liao Jianxin, Wang Jingyu, Zhu Xiaomin, Beijing University of Posts and Telecommunications

AN07-2 Optimal and Efficient End-to-End Path Computation in Multi-layer Networks

Bijan Jabbari, Shujia Gong, George Mason University

AN07-3 Providing Guaranteed Packet Loss Probability Service in IP/MPLS-based Networks

Dongli Zhang, Dan Ionescu, University of Ottawa

AN07-4 Multi Hour Robust Routing and Fast Load Change Detection for Traffic Engineering

Pedro Casas, TELECOM Bretagne, Universidad de la República, France; Lionel Fillatre, UTT; Sandrine Vaton, TELECOM Bretagne

AN07-5 Oblivious Routing Scheme Using Load Balancing Over Shortest Paths

Marija Antic, University of Belgrade; Aleksandra Smiljanic, Belgrade University, Stony Brook University

AN07-6 Early Identifying Application Traffic with Application Characteristics

Nen-Fu Huang, Gin-Yuan Jai, National Tsing Hua University; Han-Chieh Chao, National Ilan University

Thu, 22 May 2008, 10:45-12:30

Room 201-A, BICC

AN08: Traffic Management

Chair: **Geyong Min**, University of Bradford

AN08-1 Dynamic and adaptive composition of SIP-based services

Emmanuel Lavinal, Noemie Simoni, TELECOM ParisTech

AN08-2 Conservative Slow Start: Controlling Losses in Very High Speed Networks

Kazumi Kumazoe, NICT; Cesar Marcondes, Mario Gerla, UCLA; Dirceu Cavendish, Masato Tsuru, Yuji Oie, Kyushu Institute of Technology

AN08-3 Can We Multiplex IPTV and TCP?

Fengdan Wan, Lin Cai, Aaron Gulliver, University of Victoria

AN08-4 From Detection to Remediation: A Self-Organized System for Addressing Flash Crowd Problems

Linlin Xie, Paul Smith, David Hutchison, Lancaster University; Mark Banfield, Helmut Leopold, Telekom Austria; Abdul Jabbar, James Sterbenz, The University of Kansas

AN08-5 iREX MPO : A multi-path option for the iREX inter-domain QoS policy architecture

Ariffin Datuk Yahaya, Tatsuya Suda, University of California, Irvine

AN08-6 Improving Chinese Internet's Resilience through Degree Rank Based Overlay Relays Placement

Bin Yuan, Guoqiang Zhang, Yanjun Li, Guoqing Zhang, Zhongcheng Li, Chinese Academy of Sciences

Thu, 22 May 2008, 14:00-15:45

Room 201-A, BICC

AN09: Congestion Control

Chair: **Hamid Nafaa**, University College Dublin

AN09-1 Blooming Trees: Space-Efficient Structures for Data Representation

Domenico Ficara, Stefano Giordano, Gregorio Procissi, Fabio Vitucci, University of Pisa

AN09-2 Detecting and Tracing Traffic Volume Anomalies in SINET3 Backbone Network

Ping Du, National Institute of Informatics

AN09-3 Handover Latency Analysis of a Network-Based Localized Mobility Management Protocol

Ki-Sik Kong, Wonjun Lee, Korea Univ.; Youn-Hee Han, Korea Univ. of Technology; Myung-Ki Shin, ETRI

AN09-4 Integrated Method for Loss-Resilient Multicast Source Authentication and Data Reconstruction

Tatsuya Mori, Hideki Tode, Koso Murakami, Osaka University

AN09-5 Enabling Flexible Packet Filtering Through Dynamic Code Generation

Olivier Morandi, Fulvio Rizzo, Mario Baldi, Politecnico di Torino; Andrea Baldini, Cisco Systems

AN09-6 Clustering to Assist Supervised Machine Learning for Real-Time IP Traffic Classification

Thuy Nguyen, Grenville Armitage, Swinburne University of Technology

Thu, 22 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

AN1p: Advances in Networks and Internet (1)

AN1p-1 AS Tree Selection for Inter-Domain Multipoint MPLS Tunnels

Stefano Secci, Politecnico di Milano; Jean-Louis Rougier, TELECOM ParisTech (ENST); Achille Pattavina, Politecnico di Milano

AN1p-2 Lightweight, Payload-Based Traffic Classification: An Experimental Evaluation

Fulvio Rizzo, Mario Baldi, Olivier Morandi, Politecnico di Torino; Andrea Baldini, Pere Monclus, Cisco Systems

AN1p-3 Caching the P2P traffic in ISP network

Mingjiang Ye, Jianping Wu, Ke Xu, Tsinghua University

AN1p-4 Improving Peer-to-Peer Systems by Differentiated Resource Publishing Architecture

Yadong Gong, Xiaola Lin, Sun Yat-sen University

AN1p-5 Improved Loss Detection for Signaling Traffic in SCTP

Per Hurtig, Anna Brunstrom, Karlstad University

AN1p-6 Optimal Load Balancing in Publish/Subscribe Broker Networks using Active Workload Management

Hui Zhang, Samrat Ganguly, Sudeept Bhatnagar, Rauf Izmailov, NEC Labs America; Abhishek Sharma, University of Southern California

Thu, 22 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

AN2p: Advances in Networks and Internet (2)

AN2p-1 A Family of QoS Aware Congestion Control Protocols

Lei Ye, Zhijun Wang, The Hong Kong Polytechnic University; Hao Che, University of Texas at Arlington

AN2p-2 Providing End-to-End Connectivity to SIP User Agents Behind NATs

Mario Baldi, Luca De Marco, Fulvio Rizzo, Livio Torrero, Politecnico di Torino

AN2p-3 A Forwarding Approach for Routers Supporting PIM-SM in the IPv6 Networks

Yufeng Li, Han Qiu, Julong Lan, Binqiang Wang, National Digital Switching System Engineering & Technological Research Center

AN2p-4 An Explicit Rate Control Framework for Lossless Ethernet Operation

Jinjing Jiang, Raj Jain, Chakchai So-In, Washington University in St. Louis

AN2p-5 Exploring Possible Strategies for Competitions between Autonomous Systems

Lei Li, Changjia Chen, Beijing Jiaotong University

AN2p-6 Empirical Performance of IPv6 vs. IPv4 under a Dual-Stack Environment

Yuk-Nam Law, Man-Chiu Lai, Wee Lum Tan, Wing Cheong Lau, The Chinese University of Hong Kong

AN2p-7 Using Personal Electronic device for authentication-based service access

Abhishek Gaurav, Ankit Sharma, Vikas Gelara, Rajat Moona, Indian Institute of Technology Kanpur

AN2p-8 Load-Balanced Multipath Self-routing Switching Structure by Concentrators

Wei He, Hui Li, Shenzhen Graduate School, Peking Univ.;
Qin-shu Chen, HiSilicon Technologies Co. Ltd;
Peng Yi, Bing-Qiang Wang, National Digital Switching Centre;
Zheng Zhou

**Communication Quality,
Reliability, and Performance
Modeling Symposium**

Tue, 20 May 2008, 14:00-15:45
Room 308, BICC

CQ01: Traffic Control Mechanism

Chair: Tutomu Murase, NEC

CQ01-1 PingPair: a Lightweight Tool for Measurement Noise Free Path Capacity Estimation

Andrea Di Pietro, Domenico Ficara, Stefano Giordano, Francesco Oppedisano, Gregorio Procissi, University of Pisa

CQ01-2 Active Queue Management Controller for the High Speed TCP Protocol

Nelson L. S. da Fonseca, Juliana de Santi, State University of Campinas; Michele M. A. E. Lima, Federal University of Pernambuco

CQ01-3 New Congestion Control Mechanisms for Flow-Aware Networks

Jerzy Domzal, Andrzej Jajszczyk, AGH University of Science and Technology

CQ01-4 Distributed and Centralized Path Computation Algorithms: Implementation in NS2 and Performance Comparison

Davide Adami, Christian Callegari, Stefano Giordano, Michele Pagano, University of Pisa

CQ01-5 Optimal Quality-of-Experience Design for a P2P Multi-source Video Streaming

Gerardo Rubino, INRIA; Pablo Rodriguez-Bocca, Univ. of the Republic; Ana Paula Couto Da Silva, Federal Univ. of Rio de Janeiro

CQ01-6 Optimal Statistical Tuning of the RED Parameters

Homayoun Yousefzadeh, Hamid Jafarkhani, Amir Habibi, UCI; Claus Bauer, Dolby

Tue, 20 May 2008, 16:15-18:00
Room 308, BICC

CQ02: Traffic Control and Analysis

Chair: Hajime Nakamura, KDDI R&D Labs.

CQ02-1 Discovering Packet Structure through Lightweight Hierarchical Clustering

Abdulrahman Hijazi, Carleton University; Hajime Inoue, ATC-NY; Ashraf Matrawy, Paul Van Oorschot, Anil Somayaji, Carleton University

CQ02-2 Multilink Performance of the Load-Level-Based Admission Control Mechanism for OBS Networks

Igor Moraes, Otto Carlos Duarte, Universidade Federal do Rio de Janeiro

CQ02-3 On the Time Scale of TCP-Friendly Admission Control Protocols

Jie Feng, Lisong Xu, University of Nebraska - Lincoln

CQ02-4 Adaptive Rate Control Low bit-rate Video Transmission over Wireless Zigbee Networks

Ahmed Zainaldin, Ioannis Lambadaris, Biswajit Nandy, Carleton University

CQ02-5 Backlog Aware Scheduling for Large Buffered Crossbar Switches

Aditya Dua, Benjamin Yolken, Nicholas Bambos, Stanford University; Wladek Olesinski, Hans Eberle, Nils Gura, Sun Microsystems

CQ02-6 Experimental Analysis of Super-Seeding in BitTorrent

Zhijia Chen, Yang Chen, Chuang Lin, Tsinghua University; Vaibhav Nivargi, Pei Cao, Stanford University

Wed, 21 May 2008, 8:30-10:15

Room 308, BICC

CQ03: Network Traffic Engineering

Chair: Luigi Atzori, University of Cagliari

CQ03-1 Traffic Classification and Bandwidth Management in DiffServ-aware Traffic Engineering Architectures

Tatiana Onali, Luigi Atzori, University of Cagliari

CQ03-2 An Adaptive REM for Improving AQM Performance

Jinsheng Sun, Nanjing University of Science & Technology; Moshe Zukerman, Marimuthu Palaniswami, The University of Melbourne

CQ03-3 Service Level Agreement Control in the Presence of Heterogeneous Traffic and QoS Requirements

Maurizio Mongelli, Mario Marchese, University of Genova-DIST

CQ03-4 On Preventing Unnecessary Fast Retransmission With Optimal Fragmentation Strategy

Wang Jingyu, Liao Jianxin, Zhu Xiaomin, Beijing University of Posts and Telecommunications

CQ03-5 Compensation buffer sizing for providing user-level QoS guarantee of media flows

Han Qiu, Yufeng Li, Jiangxing Wu, Xiaozhuo Gu, National Digital Switching System Engineering & Technological Research Center

CQ03-6 Intelligently Balancing Per-hop Delay Allocation to Improve Network Utilization

Xiaojiang Liu, Yingfei Dong, University of Hawaii

Wed, 21 May 2008, 10:45-12:30

Room 308, BICC

CQ04: QoS and Traffic Control

Chair: Chi-Ming Chen, AT&T

CQ04-1 QoS Analysis of Queuing Systems with Self-Similar Traffic and Heavy-Tailed Packet Sizes

Xiaolong Jin, Geyong Min, University of Bradford

CQ04-2 A Qualitative Description of the Effect of Single Queues on Bin Counts

Kristof Sleurs, Jan Potemans, Johan Theunis, Dagang Li, Emmanuel Van Lil, Antoine Van de Capelle, K.U.Leuven

CQ04-3 Parametric Packet-Layer Model for Monitoring Video Quality of IPTV Services

Kazuhisa Yamagishi, Takanori Hayashi, NTT Corporation

CQ04-4 Erlang Capacity of Multi-class TDMA Systems with Adaptive Modulation and Coding

Hua Wang, Villy B. Iversen, Technical University of Denmark

CQ04-5 An Adaptive Packet Dropping Algorithm for Improved VoIP Quality at ADSL-subscribers

Qin Dai, Le Phu Do, Samer Sulaiman, Ralf Lehnert, Technische Universität Dresden

CQ04-6 Downlink Performance for Mixed Web/VoIP Traffic in 1xEVDO Revision A Networks

Hongxia Sun, Carey Williamson, University of Calgary

Wed, 21 May 2008, 14:00-15:45

Room 308, BICC

CQ05: Network Reliability and Protection

Chair: Toshinori Tsuboi, Tokyo University of Technology

CQ05-1 Multi-Flow Optimization Model for Design of a Shared Backup Path Protected Network

Brody Todd, John Doucette, University of Alberta/TR Labs

CQ05-2 Configuring Conservative Mode Fairness Algorithm in Resilient Packet Rings

Arash Shokrani, Ioannis Lambadaris, Carleton University;

Yannis Viniotis, North Carolina State University

CQ05-3 SRVF: An Energy-Efficient Link Layer Protocol for Reliable Transmission over Wireless Sensor Networks

adnan iqbal, Khurram Shahzad, Syed Ali Khayam, National University of Sciences & Technology (NUST)

CQ05-4 Use of Network Families in Survivable Network Design and Optimization

Brody Todd, John Doucette, University of Alberta/TR Labs

CQ05-5 Availability-Constrained Multipath Protection in Backbone Networks with Double-Link Failure

Han Ma, Dalia Fayek, University of Guelph; Pin-Han Ho, University of Waterloo

CQ05-6 MPP: Optimal Multi-Path Routing with Protection

Tibor Cinkler, László Gyarmati, Budapest University of Technology and Economics

Wed, 21 May 2008, 16:15-18:00

Room 308, BICC

CQ06: Network Design

Chair: Fabrizio Granelli, University of Trento

CQ06-1 Bounded-Variance Network Calculus: Computation of Tight Approximations of End-to-End Delay

Paolo Giacomazzi, Gabriella Soddemi, Politecnico di Milano

CQ06-2 A Distributed Product Coding Approach For Robust Network Coding

Jingyao Zhang, Tsinghua University; Khaled Letaief, Hong Kong University of Science and Technology; Pingyi Fan, Tsinghua University

CQ06-3 A Fixed-Parameter Tractable Algorithm for the Wavelength Assignment in WDM Mesh Networks

Nelson L. S. da Fonseca, André Drummond, State University of Campinas; Russ Gyurek, CISCO

CQ06-4 Adaptive Resources Provisioning for Grid Applications and Services

Abdelhanin Filali, Abdelhakim Hafid, Michel Gendreau, University of Montreal

CQ06-5 Evaluation of RSVP and Mobility-aware RSVP Using Performance Evaluation Process Algebra

Hao Wang, David Laurenson, Jane Hillston, The University of Edinburgh

CQ06-6 Network Coding with Multi-Generation Mixing: Analysis and Applications for Video Communication

Mohammed Halloush, Hayder Radha, MichiganState University

Thu, 22 May 2008, 8:30-10:15

Room 308, BICC

CQ07: Performance Modeling

Chair: Stefano Giordano, University of Pisa

CQ07-1 Why the PFP model reproduces the Internet?

Shi Zhou, University College London

CQ07-2 Modular Model Based Performance Evaluation of a DiffServ Network Supporting Assured Forwarding PHB

Rafal Stankiewicz, Andrzej Jajszczyk, AGH University of Science and Technology

CQ07-3 Towards Modeling of Traffic Demand of Node in Large Scale Network

Kensuke Fukuda, National Institute of Informatics

CQ07-4 Performance Modeling of Epidemic Routing with Heterogeneous Node Types

Yin-Ki Ip, Wing-Cheong Lau, On-Ching Yue, The Chinese University of Hong Kong

CQ07-5 Optimum Performance Model of ARQ Protocol under Adaptive Modulation Scheme

Yue li, Nguyen Huan, Weixi Xing, Institute of Advanced Telecommunications, Swansea University

CQ07-6 An Analytical Queuing Model for Long Range Dependent Arrivals and Variable Service Capacity

Xiaolong Jin, Geyong Min, University of Bradford; Speros/Ross Velentzas, R&D Department, AdvTec Ltd.

Thu, 22 May 2008, 10:45-12:30

Room 308, BICC

CQ08: Wireless Network Modeling

Chair: **Homayoun Yousefi'zadeh**, University of California, Irvine

CQ08-1 Throughput Model of IEEE 802.11e EDCF with Consideration of Delay Bound Constraint

Jae-Han Lim, ETRI; Ji-Hoon Yun, Seoul National University

CQ08-2 A Comprehensive Analytical Model for IEEE 802.11e QoS Differentiation Schemes under Unsaturated Traffic Loads

Jia Hu, Geyong Min, Mike E. Woodward, University of Bradford; Weijia Jia, City University of Hong Kong

CQ08-3 An Analytical Model for Prioritized Contention Access in ECMA-368 MAC Protocol

Nasim Arianpoo, Yuxia Lin, Vincent Wong, University of British Columbia; Attahiru Alfa, University of Manitoba

CQ08-4 An Analytic Model for Outage Probability and Bandwidth Demand of the Downlink in Packet Switched Cellular Mobile Radio Networks

Philipp Hasselbach, Technische Universitaet Darmstadt; Anja Klein, Technische Universitaet Darmstadt

CQ08-5 A Channel Model for the Bit Error Rate Process in 802.15.4 LR-WPAN Wireless Channels

Muhammad U. Ilyas, Hayder Radha, Michigan State University

CQ08-6 Fast and accurate PQoS estimation over 802.11g wireless network

Pasquale Pace, Marco Belcastro, Emanuele Viterbo, University of Calabria

Thu, 22 May 2008, 14:00-15:45

Room 308, BICC

CQ09: Wireless Traffic Control and QoS

Chair: **Tarik Taleb**, Tohoku University

CQ09-1 An MDP-based Approach for Multipath Data Transmission over Wireless Networks

Vinh Bui, Weiping Zhu, The University of New South Wales; Alessio Botta, Antonio Pescapè, University of Napoli Federico II

CQ09-2 Joint Queue Control and User Scheduling in MIMO Broadcast Channel under Zero-Forcing Multiplexing

Feng She, Hanwen Luo, Wen Chen, Xinbing Wang, Shanghai Jiaotong University

CQ09-3 TCP/IP over IEEE 802.11b WLAN: the Challenge of Harnessing Known-Corrupt Data

Michael Welzl, Mattia Rossi, University of Innsbruck; Andrea Fumagalli, Marco Tacca, The University of Texas at Dallas

CQ09-4 Call-Level Analysis of W-CDMA Networks Supporting Elastic Services of Finite Population

Vassilios Vassilakis, Georgios Kallos, Ioannis Moscholios, Michael Logothetis, University of Patras

CQ09-5 Adaptive Transmission of QoS-Guaranteed Traffic over MIMO Wireless Links

Jalil Seifali Harsini, Farshad Lahouti, University of Tehran

CQ09-6 Multi-Source Streaming in Next Generation Wireless Mobile Communication Systems

Tarik Taleb, Tomoyuki Nakamura, Kazuo Hashimoto, Tohoku University

Thu, 22 May 2008, 16:15-18:00

Room 308, BICC

CQ10: QoS in Emerging Wireless Networks

Chair: **Pascal Lorenz**, University of Haute Alsace

CQ10-1 Priority-based Fair Scheduling for Multimedia WiMAX Uplink Traffic

Yan Wang, RMIT University; Sammy Chan, City University of Hong Kong; Moshe Zukerman, The University of Melbourne; Richard Harris, Massey University

CQ10-2 A Fair and Dynamic Auction-based Resource Allocation Scheme for Wireless Mobile Networks

Tarik Taleb, Tohoku University

CQ10-3 Maximum Utility-based Resource Allocation Algorithm in the IEEE 802.16 OFDMA System

Juncai Shi, Aiqun Hu, Southeast University

CQ10-4 Modeling the S-MAC protocol in Single-Hop Wireless Sensor Networks

Ye Zhang, Chen He, Lingge Jiang, Shanghai Jiao Tong University

CQ10-5 Traffic Estimation and Power Saving Mechanism Optimization of IEEE 802.16e Networks

Jalal Almhana, Zikuan Liu, University of Moncton

Tue, 20 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

CQ1p: Communication QoS, Reliability, and Performance Modeling (1)

CQ1p-1 An Autonomic Service Delivery Platform for Service-Oriented Network Environments

Robert D Callaway, Michael Devetskiotis, Yannis Viniotis, NC State University; Adolfo Rodriguez, IBM

CQ1p-2 Sizes of Minimum Connected Dominating Sets of a Class of Wireless Sensor Networks

Ji Li, The University of Melbourne; Chuan Heng Foh, Nanyang Technological University; Lachlan L. H. Andrew, California Institute of Technology; Moshe Zukerman, The University of Melbourne

CQ1p-3 A New Modeling Approach for Utility-Based Resource Allocation in OFDM Networks

Mehri Mehrjoo, Somayeh Moazeni, Xuemin (Sherman) Shen, University of Waterloo

CQ1p-4 Power allocation problem in homogeneous and perturbed homogeneous CDMA networks

Marc Gilg, University of Haute-Alsace; Jean-Marc Kelif, France Telecom; Pascal Lorenz, University of Haute-Alsace

CQ1p-5 Improving WSN Simulation and Analysis Accuracy Using Two-Tier Channel Models

Adnan Iqbal, Syed Ali Khayam, National University of Sciences & Technology (NUST)

CQ1p-6 Power Management of Packet Switches via Differentiated Delay Targets
Benjamin Yolken, Nicholas Bambos, Stanford University

Wed, 21 May 2008, 14:00-15:45
Exhib. No.2 Hall, BICC

CQ2p: Communication QoS, Reliability, and Performance Modeling (2)

CQ2p-1 Efficient Search Algorithms in the Presence of Measurement Uncertainty

Bengi Karacali, Mark Karol, P. Krishnan, Avaya Labs; Beilei Zhan, Polytechnic University

CQ2p-2 Large-Scale IP Traffic Matrix Estimation Based on the Recurrent Multilayer Perceptron Network

Dingde Jiang, Guangmin Hu, University of Electronic Science and Technology of China

CQ2p-3 Link Restoration in Cognitive Radio Networks

Kin-Fai Li, Wing-Cheong Lau, On-Ching Yue, The Chinese University of Hong Kong

CQ2p-4 Wireless Video Broadcasting to Diverse Users

Carri Chan, Nicholas Bambos, Stanford University; Susie Wee, John Apostolopoulos, Hewlett-Packard Laboratories;

CQ2p-5 The Cost of Using IEEE 802.16d Dynamic Channel Configuration

Bruno Sousa, University of Coimbra; Pedro Neves, Portugal Telecom Inovação; Gabriela Leão, David Palma, Jorge Silva, University of Coimbra; Susana Sargento, University of Aveiro; Francisco Fontes, Portugal Telecom Inovação; Marília Curado, Fernando Boavida, University of Coimbra

CQ2p-6 Even Slot-Transmission in Slotted OPS Networks

Akbar Ghaffar Pour Rahbar, Sahand University of Technology

CQ2p-7 Dynamic Management of Computing and Network Resources with PID Control in Optical Grid Networks

Takuji Tachibana, Kiminao Kogiso, Kenji Sugimoto, Nara Institute of Science and Technology

Thu, 22 May 2008, 16:15-18:00
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CQ3p: Communication QoS, Reliability, and Performance Modeling (3)

CQ3p-1 A Game Theoretic Framework for Multipath Optimal Data Transfer in Multiuser Overlay Networks

Vinh Bui, Weiping Zhu, The University of New South Wales

CQ3p-2 Passive Identification of Under-Utilized CPUs in High Performance Cluster Grid Networks

Lanier Watkins, Raheem Beyah, Georgia State University; Cherita Corbett, Sandia National Laboratories

CQ3p-3 Flow-based Reservation Marking in MPLS Networks

Nianbo Liu, University of Electronic Science and Technology; Jiannong Cao, Hong Kong Polytechnic University; Ming Liu, Jiazhi Zeng, University of Electronic Science and Technology

CQ3p-4 Performance Analysis for Overlay Multicast on Treeand M-D Mesh Topologies (II)

Wanqing Tu, University College Cork; Xing Jin, The Hong Kong University of Science Technology; Cormac Sreenan, University College Cork; Mark O'Brien, Fexco Communications Limited

CQ3p-5 Using Lagrangean Relaxation for Service Location Planning with QoS constraints in Large-Scale Networks

Zill-E-Huma Kamal, Ala Al-Fuqaha, Ajay Gupta, Western Michigan University

CQ3p-6 A Markov Chain-Based Capacity Dimensioning Method for Wireless Communications System with AMC, HARQ and Packet Multimedia Traffic Source

Xinsheng Zhao, Hao Liang, Zhenjie Gu, Southeast University

Communication Software and Services Symposium

Tue, 20 May 2008, 16:15-18:00

Room 201-B, BICC

CS01: Multimedia applications and services

Chair: **Bharadwaj Veeravalli**, National University of Singapore

CS01-1 A Novel Bandwidth Management Scheme for Video Streaming Service on Public-Shared Network

Nen-Fu Huang, Hong-Yi Chang, Yuan-Wei Lin, Kuo-Shiang Hsu, National Tsing Hua University

CS01-2 Rapid Channel Zapping for IPTV Broadcasting with Additional Multicast Stream

Chikara Sasaki, Atsushi Tagami, Teruyuki Hasegawa, Shigehiro Ano, KDDI R&D Laboratories Inc.

CS01-3 Video TFRC

Evan Tan, Jing Chen, Sebastien Ardon, NICTA; Emmanuel Lochin, Université de Toulouse - ISAE

CS01-4 A Technique for Seamless VoIP-Codec Switching in Next Generation Networks

Marcel Wältermann, Blazej Lewcio, Pablo Vidales, Sebastian Möller, Berlin University of Technology

CS01-5 A Video-on-Demand Transmission Scheme for IPTV Service with Hybrid Mechanism

Hyo-Jin Park, Jong-Min Lee, Jun-Kyun Choi, Informations and Communications University

CS01-6 H^k/T: A Novel Server-Side Web Caching Strategy for Multimedia Applications

Zeng Zeng, Bharadwaj Veeravalli, NUS

Wed, 21 May 2008, 16:15-18:00

Room 201-B, BICC

CS02: Software and Protocol Technologies

Chair: **Joel Rodrigues**, University of Beira Interior

CS02-1 Traffic Shaping in BitTorrent Systems by Centralized Hierarchical Peer-node Assignment

Ting Wang, Li Wen, Wei Li, Jing Tao, Fudan University; Alan Wang, Cisco CRDC; Fred Baker, Cisco Systems

CS02-2 How well does JXTA fit Peer-to-Peer SIP?

Holger Schmidt, Burcin Aksoy, Franz J. Hauck, Ulm University;
Andreas Kassler, Karlstad University

CS02-3 A Balanced Tree-based Strategy for Unstructured Media Distribution in P2P Networks

Changqiao Xu, Athlone Institute of Technology; Gabriel-Miro Muntean, Dublin City University; Enda Fallon, Austin Hanley, Athlone Institute of Technology

CS02-4 An Application Router for SIP Servlet Application Composition

Eric Cheung, K. Hal Purdy, AT&T Labs Research

CS02-5 OCals: A Novel Overlay Construction Approach for Layered Streaming

Xin Xiao, Yuanchun Shi, Baopeng Zhang, Yuan Gao, Tsinghua University

CS02-6 Improving Quality of Experience by adding Device Resource Reservation to Service Discovery Protocols

Archi Delphinanto, Technische Universiteit Eindhoven; Frank den Hartog, TNO-ICT; Ton Koonen, Technische Universiteit Eindhoven

Thu, 22 May 2008, 8:30-10:15

Room 201-B, BICC

CS03: Network and Service Management, Provisioning and QoS

Chair: Lei Cao, University of Mississippi

CS03-1 Differential Space-Time Spreading with Segment Selective Repeat-based Automatic Repeat Request

Tao Shi, Lei Cao, The University of Mississippi

CS03-2 Haptic Data Transmission based on the Prediction and Compression

MeeYoung Sung, Younhee You, University of Incheon

CS03-3 Load Sharing based on PSO Algorithm for Isolated Distributed Stream Servers

Yunpeng Chai, Lifeng Sun, Zhihui Du, Sanli Li, Tsinghua University

CS03-4 Analysis of Interrupt Coalescing Schemes for Receive-Livelock Problem in Gigabit Ethernet Network Hosts

Xiaolin Chang, Beijing Jiaotong University

CS03-5 Average-Bandwidth Delay Q-Routing Adaptive Algorithm

Said Hoceini, Abdelhamid Mellouk, Smail Bouchra, University Paris 12

CS03-6 Multiple Description Coding over Erasure Channels

Songqing Zhao, Daniela Tuninetti, Rashid Ansari, Dan Schonfeld, UIC - University of Illinois at Chicago

Tue, 20 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

CS1p: Fixed and mobile service platforms

Chair: Marc Gilg, University of Haute Alsace

CS1P-1 Supporting Video Streaming Services in Infrastructure Wireless Mesh Networks: Architecture and Protocols

Yingnan Zhu, Wenjun Zeng, University of Missouri-Columbia; Hang Liu, Yang Guo, Saurabh Mathur, Thomson Inc

CS1P-2 Performance Analysis of Fault-Tolerant Offloading Systems for Pervasive Services in Mobile Wireless Environments

Shumao Ou, Yumin Wu, Kun Yang, University of Essex; Bosheng Zhou, Queen's University of Belfast

CS1P-3 IP Telephony over Mobile Ad hoc Networks: Joint Routing and Payout Buffering

Fabrizio Boi, Luigi Atzori, Gianluca Nonnis, University of Cagliari

CS1P-4 Active Message Oriented Adaptation Middleware for Collaborative Applications in Heterogeneous Environments

Shengpu Liu, Liang Cheng, Lehigh University

Communication Theory Symposium

Tue, 20 May 2008, 14:00-15:45

Room 310, BICC

CT01: Channel Capacity

Chair: Keith Q. T. Zhang, City University of Hong Kong

CT01-1 On the Information Rates of Channels with Insertion/Deletion/Substitution Errors

Jun Hu, Tolga M Duman, ASU; M Fatih Erden, Seagate Research

CT01-2 Theoretical Limits and Practical Detection Schemes for Markovian-Gaussian Channels

Dario Fertonani, Giulio Colavolpe, University of Parma

CT01-3 Capacity of Wireless Systems with Channel Estimation Errors

S. H. Song, Q. T. Zhang, City University of HK

CT01-4 Interference Alignment and Spatial Degrees of Freedom for the K User Interference Channel

Viveck Cadambe, Syed Jafar, University of California, Irvine

CT01-5 Optimized Multi-Antenna Broadcasting for Heterogeneous Delay-Constrained Traffic

Rui Zhang, Institute for Infocomm Research

CT01-6 Multi-Carrier Transmission with Limited Feedback: Power Loading over Sub-Channel Groups

Manish Agarwal, Dongning Guo, Michael Honig, Northwestern University

Tue, 20 May 2008, 16:15-18:00

Room 310, BICC

CT02: Cooperative Communication I

Chair: Ravi Narasimhan, University of California, Santa Cruz

CT02-1 Throughput-Delay Performance of Half-Duplex Hybrid-ARQ Relay Channels

Ravi Narasimhan, University of California, Santa Cruz

CT02-2 Single-Symbol ML Decodable Precoded DSTBCs for Cooperative Networks

B. Sundar Rajan, Harshan Jagadeesh, Indian Institute of Science

CT02-3 Non-Differential DSTBCs for Partially-Coherent Cooperative Communication

Harshan Jagadeesh, B. Sundar Rajan, Indian Institute of Science

CT02-4 On the Performance of CSI-Assisted Cooperative Communications Over Generalized Fading Channels

Marco Di Renzo, Telecommunications Technological Center of Catalonia; Fabio Graziosi, Fortunato Santucci, University of L'Aquila

CT02-5 Relay selection for low-complexity coded cooperation using the Bhattacharyya parameter

Josephine Chu, Raviraj Adve, University of Toronto; Andrew Eckford, York University

CT02-6 Analysis of a General Mixed Strategy for Gaussian Multiple Relay Channels

Peter Rost, Gerhard Fettweis, Technische Universität Dresden

Wed, 21 May 2008, 8:30-10:15

Room 310, BICC

CT03: Cooperative Communication II

Chair: Nihar Jindal, University of Minnesota

CT03-1 Power and Bandwidth Allocation in Cooperative Dirty Paper Coding

Chris Ng, Stanford University; Nihar Jindal, University of Minnesota; Andrea Goldsmith, Stanford University; Urbashi Mitra, University of Southern California

CT03-2 Flow-optimized Asynchronous Relay Selection Protocol for Parallel Relay Networks

Wai Pan Tam, Tat M. Lok, The Chinese University of Hong Kong; Tan F. Wong, University of Florida

CT03-3 Single-Symbol ML Decodable Distributed STBCs for Partially-Coherent Cooperative Networks

Dheeraj Sreedhar, Ananthanarayanan Chockalingam, B. Sundar Rajan, Indian Institute of Science

CT03-4 On the Throughput-Reliability Tradeoff Analysis in Amplify-and-Forward Cooperative Channels

Jun Li, Wen Chen, Cheng Zhao, Xiaoting Yang, Xinbing Wang, Shanghai Jiaotong University

CT03-5 Spectral Efficient Cooperative Communications via Spatial Signal Separation

Diomidis Michalopoulos, George Karagiannidis, Aristotle University of Thessaloniki

CT03-6 Network Coding for Two-Way Relaying: Rate Region, Sum Rate and Opportunistic Scheduling

Chun-Hung Liu, University of Texas at Austin; Feng Xue, Intel Corporation

Wed, 21 May 2008, 10:45-12:30

Room 310, BICC

CT04: Cognitive Radio

Chair: Rui Zhang, Institute of Infocomm Research

CT04-1 Cognitive radio with secondary packet-by-packet vertical handover

Jonathan Gambini, Politecnico di Milano; Osvaldo Simeone, NJIT; Umberto Spagnolini, Politecnico di Milano; Yehekel Bar-Ness, NJIT; Yungsoo Kim, Samsung Electronics Co.

CT04-2 A New Achievable Rate Region for the Cognitive Radio Channel

Jinhua Jiang, Yan Xin, National University of Singapore

CT04-3 Adaptive Sum Power Iterative Waterfilling for MIMO Cognitive Radio Channels

Rajiv Soundararajan, Sriram Vishwanath, The University of Texas at Austin

CT04-4 Cognitive Radio with Partial Channel State Information at the Transmitter

Pin-Hsun Lin, Shih-Chun Lin, Hsuan-Jung Su, National Taiwan University

CT04-5 A New Look at Multi-user Power Control Games

Yi Su, Mihaela van der Schaar, Univ. of California, Los Angeles

CT04-6 Interference in Air-to-Ground Cellular Systems

Besma Smida, Wahid Tarokh, Harvard University

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Room 310, BICC

CT05: Wireless Networks

Chair: Michael Honig, Northwestern University

CT05-1 On the Finite-User Stability Region of Slotted ALOHA with Cooperative Users

Chun-Kuang Lin, Y.-W. Peter Hong, National Tsing Hua University

CT05-2 Joint Channel Estimation and Co-Channel Interference Mitigation in Wireless Networks Using Belief Propagation

Yan Zhu, Dongning Guo, Michael Honig, Northwestern University

CT05-3 Aggressive Transmission with ARQ in Quasi-Static Fading Channels

Cong Shen, UCLA; Tie Liu, Texas A&M University; Michael Fitz, UCLA

CT05-4 Two-User Opportunistic Scheduling using Hierarchical Modulations in Wireless Networks with Heterogenous Average Link Gains

Md. Hossain, McGill University; Vijay Bhargava, University of British Columbia; Mohamed-Slim Alouini, TAMU-Q

CT05-5 Dimension Compression Relaying for Slow Fading Channels based on Hybrid Digital-Analog Source-Channel Coding

Sha Yao, Mikael Skoglund, Royal Institute of Technology

CT05-6 Performance of ALOHA and CSMA in Spatially Distributed Wireless Networks

Mariam Kaynia, Norwegian University of Science and Technology; Nihar Jindal, University of Minnesota

Wed, 21 May 2008, 16:15-18:00

Room 310, BICC

CT06: Cooperative Communication III

Chair: Xiang-Gen Xia, University of Delaware

CT06-1 Characterizing Achievable Rates for Two-Path Digital Relaying

Rui Zhang, Institute for Infocomm Research

CT06-2 OFDM based Distributed Space Time Coding for Asynchronous Relay Networks

B. Sundar Rajan, G. Susinder Rajan, Indian Institute of Science

CT06-3 Distributed Non-Coherent Grassmann Space-Time Codes for Wireless Relay Networks

Zoran Utkovski, Wenbin Li, Juergen Lindner, University of Ulm

CT06-4 Design and Analysis of Multi-Relay Selection for Cooperative Spatial Multiplexing

Zhang Shunqing, Lau Vincent K. N., Hong Kong University of Science and Technology

CT06-5 Distributed Linear Convulsive Space-Time Codes for Asynchronous Cooperative Communication Networks

Xiaoyong Guo, Xiang-Gen Xia, University of Delaware

CT06-6 Memoryless Relay Strategies for Two-Way Relay Channels: Performance Analysis and Optimization

Tao Cui, Tracey Ho, California Institute of Technology; Jorg Kliewer, New Mexico State University

Thu, 22 May 2008, 8:30-10:15

Room 306, BICC

CT07: LDPC and Turbo Codes

Chair: Marco Ferrari, CNR-IEIT - Politecnico di Milano

CT07-1 Maximum Likelihood Decoding of Turbo Codes on the Binary Erasure Channel

Marco Ferrari, CNR-IEIT Politecnico di Milano; Sandro Bellini, Politecnico di Milano

CT07-2 Tangential Sphere Bounds on the Ensemble Performance of ML Decoded Gallager Codes via Their Exact Ensemble Distance Spectrum

Sheng Tong, State Key Lab. of ISN, Xidian University and City University of Hong Kong

CT07-3 Lower-Complexity Layered Belief-Propagation Decoding of LDPC Codes

Yuan-Mao Chang, Andres Vila Casado, Mau-Chung Frank Chang, Richard Wesel, University of California, Los Angeles

CT07-4 A Modification to Weighted Bit-Flipping Decoding Algorithm for LDPC Codes based on Reliability Adjustment

Dajun Qian, Ming Jiang, Chunming Zhao, Xiaofu Wu, Southeast University

CT07-5 New Classes of LDPC Stabilizer Codes Using Ideas from Matrix Scrambling

Peiyu Tan, Jing (Tiffany) Li, Lehigh University

CT07-6 A Class of Low-Density Parity-Check Convolutional Codes Based on Difference Families

Yu-Cheng He, Christian Cardinal, David Haccoun, École Polytechnique de Montréal

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Room 310, BICC

CT08: Coding and Modulation I

Chair: Fernando Perez-Cruz, Princeton University

CT08-1 Ring Convolutional Coded CPM for Joint Source/Channel Coding

Zihuai Lin, University of Sydney

CT08-2 Improved Upper Bounds for Approximate Lattice Decoding With Dual-Basis Reduction

Cong Ling, Imperial College London

CT08-3 Row-Monomial Distributed Orthogonal Space-Time Block Codes with Channel Phase Information

Zhihang Yi, Il-Min Kim, Queen's University

CT08-4 Aperiodic Correlation of Complex Sequences from Difference Sets

Ruizhong Wei, Zhiwei Mao, Kewei Yuan, Lakehead University

CT08-5 Characterization of Luby Transform codes with small message size for low-latency decoding

Elizabeth Bodine, Caltech; Michael Cheng, Jet Propulsion Laboratory

CT08-6 Optimal Precoding for Digital Subscriber Lines

Fernando Perez-Cruz, Princeton University; Miguel Rodrigues, Porto University; Sergio Verdu, Princeton University

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Room 310, BICC

CT09: Coding and Modulation II

Chair: Fernando Perez-Cruz, Princeton University

CT09-1 Union Bound Analysis of Concatenated Twist Hadamard Codes

Shuling Che, Xinmei Wang, Xidian University

CT09-2 Nonlinear Turbo Codes for Higher-Order Modulations

Miguel Griot, Andres Vila Casado, Richard Wesel, UCLA

CT09-3 Low-complexity Pattern-eliminating Codes for ISI-limited Channels

Natasa Blitvic, Lizhong Zheng, Vladimir Stojanovic, MIT

CT09-4 The Impact of Noise Correlation on the Single-Symbol ML Decodable Distributed STBCs

Zhihang Yi, Il-Min Kim, Queen's University

CT09-5 Coded Modulation for Hybrid ARQ with Mapping Rearrangement

Mustapha Benjillali, Leszek Szczecinski, INRS-EMT

CT09-6 Analysis of Overlapped Code Division Multiple Access System in Gaussian Multiple Access Channel

Xing Yang, Yong Mo, Wei Jiang, Daoben Li, Beijing University of Posts and Telecommunications

Thu, 22 May 2008, 14:00-15:45

Room 305-C, BICC

CT10: MIMO Theory

Chair: Meixia Tao, Shanghai Jiao Tong University

CT10-1 Asymptotic BER Analysis for MIMO-BICM with Zero-Forcing Detectors Assuming Imperfect CSI

I-Wei Lai, National Taiwan University; Susanne Godtmann, RWTH Aachen University; Tzi-Dar Chiueh, National Taiwan University; Gerd Ascheid, Heinrich Meyr, RWTH Aachen University

CT10-2 Exact Closed-Form BER Analysis of MIMO Multiplexing under Channel Prediction Errors

Unai Fernandez-Plazaola, Eduardo Martos-Naya, Jose F. Paris, Universidad de Málaga; Andrea J. Goldsmith, Stanford University

CT10-3 Analysis of Differential Unitary Space-Time Modulation over Non-Identical MIMO Channels

MeixiaTao, Shanghai JiaoTong University

CT10-4 Novel Space-Time Coded MIMO Receivers In the Presence of Channel Estimation Errors

Yunfei Chen, University of Warwick; Norman Beaulieu, University of Alberta

CT10-5 Spectral Efficiency of Distributed MIMO Cellular Systems in a Composite Fading Channel

Dongming Wang, Xiaohu You, Jiangzhou Wang, Yan Wang, Southeast Univ.; Xiaoyun Hou, Nanjing University of Posts and Telecommunications

CT10-6 Performance Analysis of Rayleigh-Product MIMO Channels with Optimal Beamforming

Shi Jin, University College London; Matthew McKay, Hong Kong University of Science and Technology; Kai-Kit Wong, University College London; Xiqi Gao, National Mobile Communications Research

Thu, 22 May 2008, 14:00-15:45

Room 310, BICC

CT11: Fading Channels I

Chair: Daniela Tuninetti, University of Illinois, Chicago

CT11-1 A General Framework for the Distribution of the Eigenvalues of Wishart Matrices

Alberto Zanella, IEIT CNR; Chiani Marco, University of Bologna; Moe Z. Win, LIDS

CT11-2 Spectral Efficiency in Reference-Signal-Assisted Low-Power Wireless Communication

Angel Lozano, Bell Labs

CT11-3 On the Capacity of Training-Based Transmissions with Input Peak Power Constraints

Mustafa Cenk Gursoy, University of Nebraska-Lincoln

CT11-4 On the Eigenvalue Distribution of Ricean MIMO Channels by Character Expansion of Groups

Alireza Ghaderipour, Chintha Tellambura, University of Alberta

CT11-5 Analysis of Fixed Outage Transmission Schemes: A Finer Look at the Full Multiplexing Point

Peng Wu, Nihar Jindal, University of Minnesota

CT11-6 Repetition protocols for block fading channels that combine transmission requests and state information

Jean Perret, Institut National Polytechnique de Grenoble; Daniela Tuninetti, University of Illinois at Chicago

Thu, 22 May 2008, 16:15-18:00

Room 305-C, BICC

CT12: OFDM

Chair: Yuping Zhao, Peking University

CT12-1 2 dB better than CP-OFDM with OFDM/OQAM for preamble-based channel estimation

Chrislin Lele, Pierre Siohan, Rodophe Legouable, France Telecom

CT12-2 Multipath Diversity of Precoded OFDM with Linear Equalization

Xiaojing Huang, University of Wollongong

CT12-3 Joint Estimation for Both AGC and DC Based on Distribution Function for OFDM Systems

Xiao-Xin Zhang, Yuping Zhao, Peking University

CT12-4 On the Capacity of OFDM Systems with Receiver I/Q Imbalance

Stefan Krone, Gerhard Fettweis, Technische Universität Dresden

CT12-5 Deriving a Joint Interference Detection and Channel Estimation for WB-OFDM from EM-MAP Theory

Niels Hadaschik, Gerd Ascheid, RWTH Aachen University

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Room 310, BICC

CT13: Fading Channels II

Chair: Young Gil Kim, University of Seoul

CT13-1 Lossless Selection Combining Without Channel State Information

Young Gil Kim, University of Seoul; Norman Beaulieu, University of Alberta

CT13-2 On the Performance Analysis of Composite Multipath/Shadowing Channels Using the G-distribution

Amine Laourine, Cornell University; Mohamed-Slim Alouini, Texas A&M University at Qatar; Sofiene Affes, INRS-EMT; Alex Stephenne, Ericsson-Canada

CT13-3 Comparison of Erasure Tests with Diversity Reception for Noncoherent M-ary FSK Signaling

Young Gil Kim, University of Seoul; Norman Beaulieu, University of Alberta

CT13-4 Moments and Autocorrelations of the Signal to Interference Ratio in Wireless Communications

Khairi Hamdi, University of Manchester

CT13-5 Further Results on Prony Approximation for Evaluation of the Average Probability of Error

Pavel Loskot, Swansea University; Norman Beaulieu, University of Alberta

CT13-6 On the Design of Modern Multilevel Coded Modulation for Unequal Error Protection

Cong Shen, Michael Fitz, UCLA

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Exhib. No.2 Hall, BICC

CT1p: Fading Channels III

Chair: Pavel Loskot, University of Wales Swansea

CT1p-1 MIMO Optical Wireless Channels Using Halftoning

Mohamed D. A. Mohamed, Awad Dabbo, Steve Hranilovic, McMaster University

CT1p-2 A Simple Modulation Code with Peak Power Reduction and Coding Gain

Makoto Tanahashi, Hideki Ochiai, Yokohama National University

CT1p-3 Novel Simpler Expressions for the BER of MRC BPSK in Correlated Rayleigh Fading and CCI

Payam Dehghani Rahimzadeh, Norman Beaulieu, University of Alberta

CT1p-4 Bounds on Optimal End-to-End Distortion of MIMO Links

Jinhui Chen, Dirk T. M. Slock, Eurecom Institute

CT1p-5 A Hypergeometric View on Diversity Combining

Pavel Loskot, Norman Beaulieu, Swansea University

CT1p-6 Design of Reduced-Rank MMSE Combiner in Asynchronous MC-DS-CDMA

Chien-Hwa Hwang, Feng-Tsun Chien, National Chiao Tung University

CT1p-7 Asymptotic Performance of DS-CDMA with linear MMSE Receiver and Limited Feedback

Wiroonsak Santipach, Kasetsart University

CT1p-8 Managing the Degree of Impulsiveness of Other Cell Interference

Moran Gariby, Tal Gariby, Ram Zamir, Tel Aviv University

Wed, 21 May 2008, 10:45-12:30

Exhib. No.2 Hall, BICC

CT2p: Communication Theory

Chair: Xin Wang, Fudan University

CT2p-1 A Quadrature Markov Chain Model of the Rayleigh Fading Channel

Robert Carruthers, Norman Beaulieu, University of Alberta

CT2p-2 Asymptotic Analysis of CP-SC-FDE and UW-SC-FDE in Additive Cyclostationary Noise

Young Geon Yoo, Joon Ho Cho, Pohang Univ. of Science and Technology

CT2p-3 Unveiling Near-Capacity Code Design: The Realization of Shannon's Communication Theory for MIMO Channels

Soon Xin Ng, Jin Wang, Lajos Hanzo, University of Southampton

CT2p-4 Semi-Blind Power Allocation for Digital Subscriber Lines

Rodrigo Moraes, Federal University of Pará; Boris Dortschy, Ericsson AB; Aldebaro Klautau, Federal University of Pará; Jaume Rius i Riu, Ericsson AB

CT2p-5 On Universal Variable-Rate Slepian-Wolf Coding

Jun Chen, McMaster University; Da-ke He, Ashish Jagmohan, Luis Lastras-Montano, IBM T. J. Watson Research Center

CT2p-6 Searching for Capacity Factors is NP-complete

Yuan Li, Zheng Huang, Xin Wang, Haibin Kan, Fudan University

Information and Network Security Symposium

Tue, 20 May 2008, 14:00-15:45

Room 202, BICC

IS01: Sensor and Ad-hoc Network Security

Chair: Nei Kato, Tohoku University

IS01-1 AEMA: An Aggregated Emergency Message Authentication Scheme for Enhancing the Security of Vehicular Ad Hoc Networks

Haojin Zhu, Xiaodong Lin, Rongxing Lu, Pin-Han Ho, Xuemin (Sherman) Shen, University of Waterloo

IS01-2 Lightweight, distributed access control for wireless sensor networks supporting mobility

Leonardo Maccari, Lorenzo Mainardi, University of Florence; Maria Antonietta Marchitti, Aalborg University; Neeli R. Prasad, Aalborg University; Romano Fantacci, University of Florence

IS01-3 Detection of Compromised Sensor Nodes in Heterogeneous Sensor Networks

Xiaojiang Du, North Dakota State University

IS01-4 RAISE: An Efficient RSU-aided Message Authentication Scheme in Vehicular Communication Networks

Chenxi Zhang, Xiaodong Lin, Rongxing Lu, Pin-Han Ho, University of Waterloo

IS01-5 PPGCV: Privacy Preserving Group Communications Protocol for Vehicular Ad Hoc Networks

Albert Wasef, Xuemin (Sherman) Shen, University of Waterloo

IS01-6 SA-OLSR: Security Aware Optimized Link State Routing for Mobile Ad Hoc Networks

Bounpadith Kannhavong, Hidehisa Nakayama, Yoshiaki Nemoto, Tohoku University; Abbas Jamalipour, The University of Sydney; Nei Kato, Tohoku University

Tue, 20 May 2008, 16:15-18:00

Room 202, BICC

IS02: Data Security and Analysis

Chair: Weiping Wang, Central South University

IS02-1 Differentiating Data Security and Network Security
Stamatios Kartalopoulos, The University of Oklahoma
IS02-2 Complexity Analysis of Retrieving Knowledge from Auditing Log Files for Computer and Network Forensics and Accountability

Daisuke Takahashi, Yang Xiao, The University of Alabama
IS02-3 Energy-aware Adaptive Watermarking for Real-Time Image Delivery in Wireless Sensor Networks
Honggang Wang, Dongming Peng, Wei Wang, Hamid Sharif, University of Nebraska-Lincoln; Hsiao-Hwa Chen, National Sun Yat-Sen University

IS02-4 A new anonymity measure based on partial entropy
Guihua Duan, Weiping Wang, Jianxin Wang, Luming Yang, Central South University

IS02-5 VISOR: VoIP Security using Reputation
Weilai Yang, Paul Judge, Secure Computing Corporation

IS02-6 Formal Verification of Firewall Policies
Alex X. Liu, Michigan State University

Wed, 21 May 2008, 8:30-10:15
Room 201-C, BICC

IS03: Authentication Services

Chair: Pin-Han Ho, University of Waterloo

IS03-1 AICN: An Efficient Algorithm to Identify Compromised Nodes in Wireless Sensor Network
Rongxing Lu, Xiaodong Lin, Chenxi Zhang, Haojin Zhu, Pin-Han Ho, Xuemin (Sherman) Shen, University of Waterloo

IS03-2 Authentication Overhead in Wireless Networks
Yan Zhang, Simula Research Laboratory

IS03-3 A Hash Tree Based Authentication Scheme in SIP Applications

Ke Xu, Xiaowei Ma, Chunyu Liu, Tsinghua University
IS03-4 A Framework of Combining Intrusion Detection and Continuous Authentication in Mobile Ad Hoc Networks
Jie Liu, F. Richard Yu, Chung-Horng Lung, Carleton University; Helen Tang, Defence R&D Canada

IS03-5 A Physical-Layer Technique to Enhance Authentication for Mobile Terminals
Liang Xiao, Larry Greenstein, Narayan Mandayam, Wade Trappe, Rutgers University

IS03-6 Secret Little Functions and Codebook for Protecting Users from Password Theft
Yang Xiao, The University of Alabama; Chung-Chih Li, Illinois State University; Ming Lei, Susan V. Vrbsky, The University of Alabama

Wed, 21 May 2008, 10:45-12:30
Room 201-C, BICC

IS04: Trust Management and Cryptography

Chair: Said Boussakta, University of Newcastle upon Tyne

IS04-1 Provably Secure Self-certified Partially Blind Signature Scheme from Bilinear Pairings

Xiaodong Lin, Rongxing Lu, Haojin Zhu, Pin-Han Ho, Xuemin (Sherman) Shen, University of Waterloo

IS04-2 A Virtual Password Scheme to Protect Passwords
Ming Lei, Yang Xiao, Susan V. Vrbsky, The University of Alabama; Chung-Chih Li, Illinois State University; Li Liu, The University of Alabama

IS04-3 Worm Propagation Dynamics in Wireless Sensor Networks
Bo Sun, Lamar University; Guanhua Yan, Los Alamos National Laboratory; Yang Xiao, University of Alabama

IS04-4 A New Development of Symmetric Key Cryptosystem

Xiao Yang, Said Boussakta, Newcastle University
IS04-5 CRMS: A Collusion-Resistant Matrix System for Group Key Management in Wireless Networks

Wei Wang, Jianfeng Ma, Key Laboratory of CNIS, Xidian University; SangJae Moon, Kyungpook National University

Wed, 21 May 2008, 14:00-15:45
Room 202, BICC

IS05: Detection and Analysis of Worms and Attacks

Chair: Xinwen Fu, Dakota State University

IS05-1 A k-Nearest Neighbor Approach for User Authentication through Biometric Keystroke Dynamics
Jiankun Hu, Don Gingrich, RMIT University; Andy Sentosa, Editure Pty Ltd

IS05-2 Worm Detection at Network Endpoints Using Information-Theoretic Traffic Perturbations
Syed Ali Khayam, National University of Sciences & Technology (NUST); Hayder Radha, Michigan State University; Dmitri Loguinov, Texas A&M University

IS05-3 A Distributed Detection of Hit-list Worms
Nobutaka Kawaguchi, Hiroshi Shigeno, Kenichi Okada, Keio University

IS05-4 A Closed-Form Expression for Static Worm-Scanning Strategies
Zesheng Chen, Florida International University; Chao Chen, Indiana University - Purdue University Fort Wayne

IS05-5 A New Replay Attack Against Anonymous Communication Networks
Ryan Pries, Dakota State University; Wei Yu, Texas A&M University; Xinwen Fu, Dakota State University; Wei Zhao, Rensselaer Polytechnic Institute

IS05-6 Detection of Selective Forwarding Attacks in Heterogeneous Sensor Networks
Jeremy Brown, Xiaojiang Du, North Dakota State University

Wed, 21 May 2008, 16:15-18:00
Room 202, BICC

IS06: Traffic Classification and Detection

Chair: Ruixi Yuan, Tsinghua University

IS06-1 Information Entropy based Clustering Method for Unsupervised Internet Traffic Classification

Jing Yuan, Zhu Li, Ruixi Yuan, Tsinghua University

IS06-2 Detecting Malware Outbreaks using a Statistical Model of Blackhole Traffic

Sohraab Soltani, Michigan State University; Syed Ali Khayam, National University of Sciences & Technology (NUST); Hayder Radha, Michigan State University

IS06-3 Detecting MAC Layer Collision Abnormalities in CSMA/CA Wireless Networks

Alberto Lopez Toledo, Telefonica Research; Xiaodong Wang, Columbia University

IS06-4 A Dynamic Trust Management Scheme to Mitigate Malware Proliferation in P2P Networks

Xuhua Ding, Singapore Management University; Wei Yu, Texas A&M University; Ying Pan, Singapore Management University

IS06-5 CESVM: Centered Hyperellipsoidal Support Vector Machine Based Anomaly Detection

Sutharshan Rajasegarar, Christopher Leckie, Marimuthu Palaniswami, The University of Melbourne

IS06-6 Traceroute-Based Topology Inference without Network Coordinate Estimation

Xing Jin, HKUST; Wanqing Tu, UCC; S.-H. Gary Chan, HKUST

Thu, 22 May 2008, 14:00-15:45

Room 201-C, BICC

IS07: Security Protocols

Chair: **Jian Ren**, Michigan State University

IS07-1 General Weakness in Certain Broadcast Encryption Protocols Employing the Remainder Approach

Wen Tao Zhu, Graduate University of Chinese Academy of Sciences

IS07-2 A Key Management Protocol for Wireless Sensor Networks with Multiple Base Stations

Yong Wang, Byrav Ramamurthy, Yuyan Xue, University of Nebraska-Lincoln

IS07-3 A source-location privacy protocol in WSN based on locational angle

Weiping Wang, Liang Chen, Jianxin Wang, Central South University

IS07-4 Robust and Reliable Broadcast Protocols in the Stand-alone and Simulation-based Frameworks

Huafei Zhu, Feng Bao, Institute for Infocomm Research; Robert H Deng, Singapore Management University

IS07-5 Security Verification of 802.11i 4-way Handshake Protocol

Jing Liu, Chinese Academy of Sciences; Xinming Ye, Inner Mongolia University; Jun Zhang, Jun Li, Chinese Academy of Sciences

IS07-6 Anonymous Communication Protocol in Overlay Networks

Jian Ren, Tongtong Li, Michigan State University; Keesook Han, Air Force Research Laboratory

Thu, 22 May 2008, 16:15-18:00

Room 201-C, BICC

IS08: Distributed Security and Denial-of- Service Attacks

Chair: **Jingsha He**, Beijing University of Technology

IS08-1 Defending DoS Attacks on Broadcast Authentication in Wireless Sensor Networks

Xiaojiang Du, North Dakota State University; Mohsen Guizani, Western Michigan University; Yang Xiao, The University of Alabama; Hsiao-Hwa Chen, National Cheng Kung University

IS08-2 A Random Packet Destruction DoS attack for Wireless Networks

Bosheng Zhou, Alan Marshall, Wenzhe Zhou, Queens University Belfast; Kun Yang, University of Essex

IS08-3 A Principal Components Analysis-based Robust DDoS Defense System

Huizhong Sun, Yan Zhaung, H. Jonathan Chao, Polytechnic University

IS08-4 Detecting Pulsing Denial-of-Service Attacks Based on the Bandwidth Usage Condition

Hiroshi Tsunoda, Kenjiro Arai, Yuji Waizumi, Tohoku University; Nirwan Ansari, New Jersey Institute of Technology; Yoshiaki Nemoto, Tohoku University

IS08-5 A Detection and Recovery Architecture Against DoS and Worm Attacks in NGMN

Fazirulhisyam Hashim, M. Rubaiyat Kibria, Abbas Jamalipour, University of Sydney

IS08-6 Mobility-Pattern-Based Anomaly Detection Algorithm in Mobile Networks

Chaoli Cai, Ajay Gupta, Western Michigan University

Thu, 22 May 2008, 8:30-10:15

Exhib. No.2 Hall, BICC

IS1p: Authentication and Information Sharing

IS1p-1 A New Provably Secure Certificateless Signature Scheme

Lei Zhang, Futai Zhang, Nanjing Normal University

IS1p-2 Mutual Authentication in Wireless Mesh Networks

Fu Yingfang, He Jingsha, Wang Rong, Li Guorui, Beijing University of Technology

IS1p-3 Secure Group-based Information Sharing in Mobile Ad Hoc Networks

Weichao Wang, Yu Wang, University of North Carolina at Charlotte

IS1p-4 A Visualization Framework for Self-monitoring of Web-based Information Disclosure

Kulsoom Abdullah, Georgia Institute of Technology; Gregory Conti, United States Military Academy; Raheem Beyah, Georgia State University

IS1p-5 Combining Speak-up with DefCOM for Improved DDoS Defense

Mohit Mehta, George Oikonomou, Kanika Thapar, University of Delaware; Jelena Mirkovic, USC Information Sciences Institute

IS1p-6 Malware Behavior Analysis in Isolated Miniature Network for Revealing Malware's Network Activity
Daisuke Inoue, Katsunari Yoshioka, Masashi Eto, National Institute of Information and Communications Technology (NICT); Yuji Hoshizawa, SecureBrain Corporation; Koji Nakao, National Institute of Information and Communications Technology (NICT)

Thu, 22 May 2008, 10:45-12:30

Exhib. No.2 Hall, BICC

IS2p: Network and Application Security

IS2p-1 Maximization of Network Survival Time in the Event of Intelligent and Malicious Attacks

Po-Hao Tsang, Frank Yeong-Sung Lin, Chun-Wei Chen, National Taiwan University

IS2p-2 Real-Time, Byzantine-Tolerant Information Dissemination in Unreliable and Untrustworthy Distributed Systems

Kai Han, Guan hong Pei, Binoy Ravindran, Virginia Tech; E. D. Jensen, The MITRE Corporation

IS2p-3 Boundary Hashing for Memory-Efficient Deep Packet Inspection

Sertac Artan, Masanori Bo, Jonathan Chao, Polytechnic University, Brooklyn

IS2p-4 Detection of Encrypted Tunnels across Network Boundaries

Maurizio Dusi, Manuel Crotti, Francesco Gringoli, Luca Salgarelli, University of Brescia

IS2p-5 B-APT: Bayesian Anti-Phishing Toolbar

Eunjin Jung, Peter Likarish, Juan Pablo Hourcade, Don Dunbar, Thomas Hansen, University of Iowa

IS2p-6 Lightweight Security for Network Coding

João P. Vilela, Luísa Lima, João Barros, Instituto de Telecomunicações/Universidade do Porto

Optical Networks and Systems Symposium

Tue, 20 May 2008, 14:00-15:45

Room 201-B, BICC

ON01: Protection and Restoration

Chair: Georgios Ellinas, University of Cyprus

ON01-1 A New Insight and Approach to Node Failure Protection with Ordinary p-Cycles

Diane P. Onguetou, Wayne D. Grover, TRILabs and University of Alberta

ON01-2 Best Effort Shared Risk Link Group (SRLG) Failure Protection in WDM Networks

Xu Shao, Luying Zhou, Xiaofei Cheng, Institute for Infocomm Research; Weiguo Zheng, Tsinghua University; Yixin Wang, Institute for Infocomm Research

ON01-3 A Generalized Strategy for 1+N Protection

Ahmed Kamal, Iowa State University

ON01-4 A Comparative Study of Fast Protection Schemes in WDM Mesh Networks

Bin Wu, Kwan Yeung, The University of Hong Kong; Pin-Han Ho, University of Waterloo

ON01-5 Intelligent p-Cycle Protection for Multicast Sessions in WDM Networks

Taiming Feng, Lu Ruan, Wensheng Zhang, Iowa State University

ON01-6 Reliability of Connections in Multilayer Networks under Shared Risk Groups and Costs Constraints

David Coudert, INRIA; Florian Huc, CNRS; Fabrice Peix, Marie-Emilie Voge, INRIA

Wed, 21 May 2008, 8:30-10:15

Room 201-B, BICC

ON02: Optical Access Networks and Optical-Wireless Systems

Chair: Hassan Naser, Lakehead University

ON02-1 A Novel Ring-Based WDM-PON Access Architecture for the Efficient Utilization of Network Resources

Hasan Erkan, ASM Delowar Hossain, Roger Dorsinville, Mohamed Ali, City University of New York; Georgios Ellinas, University of Cyprus; Antonis Hadjiantonis, Intercollege; Ahmad Khalil, LaGuardia College, CUNY

ON02-2 Flexible Optical Access Network with SOA amplification

Roman Glatty, Philippe Guignard, Philippe Chanclou, France Telecom

ON02-3 Non-Linear Predictor-Based Dynamic Bandwidth Allocation over TDM-PONs: Stability Analysis and Controller Design

Si Yin, NJIT; Yuanqiu Luo, NEC Laboratories America; Nirwan Ansari, NJIT; Ting Wang, 2NEC Laboratories America

ON02-4 CaDAR: an Efficient Routing Algorithm for Wireless-Optical Broadband Access Network

Abu (Sayeem) Reaz, Vishwanath Ramamurthi, Suman Sarkar, Dipak Ghosal, University of California, Davis; Sudhir Dixit, Nokia Research Center; Biswanath Mukherjee, University of California, Davis

ON02-5 Mobile MC-CDMA Optical wireless System Employing an Adaptive Multibeam Transmitter and Diversity Receivers in a Real Indoor Environment

Fuad Alsaadi, Jaafar Elmighani, University of Leeds, Leeds

ON02-6 Transmit Power Adaptation for a Mobile Multibeam Spot Diffusing Optical Wireless System in One and Two Planes

Jamal Alattar, Jaafar Elmighani, University of Leeds

Wed, 21 May 2008, 10:45-12:30

Room 201-B, BICC

ON03: Optical Burst Switching

Chair: **Jing Wu**, Communications Research Centre (CRC)

ON03-1 Fairness-Improving Adaptive Routing in Optical Burst Switching Mesh Networks

Xingbo Gao, Mostafa Bassiouni, University of Central Florida

ON03-2 Improving the performance of optical burst switching with large control overhead

C.Y. Li, P.K.A. Wai, The Hong Kong Polytechnic University;
Victor O.K. Li, The University of Hong Kong

ON03-3 Minimizing Preemption Probability to Efficiently Support Service Differentiation in Just-In-Time based OBS Networks

Guido Marchetto, Politecnico di Torino

ON03-4 On Routing Optimization in Multi-class Optical Burst Switching Networks

Wenda Ni, Tsinghua University; Chunlei Zhu, NVIDIA, Inc.;
Xiaoping Zheng, Yanhe Li, Yili Guo, Hanyi Zhang, Tsinghua University

ON03-5 Inbuilt-Burstification Urgency-driven Scheduling(iBUS) Algorithm for Packet Transport in IP-over-WDM Networks

Anpeng Huang, Biswanath Mukherjee, University of California, Davis

ON03-6 Impairment-Aware Manycasting Over Optical Burst-Switched Networks

Balagangadhar Bathula, Vinod Vokkarane, Rajesh Bikram, University of Massachusetts-Dartmouth

Wed, 21 May 2008, 14:00-15:45

Room 201-B, BICC

ON04: Network Design, Routing and Grooming

Chair: **Suresh Subramaniam**, George Washington University

ON04-1 On-line Distributed Traffic Grooming

Ran Libeskind-Hadas, Brian Rice, Adrian Sampson, Harvey Mudd College; Jordan Crouser, Smith College

ON04-2 Traffic Grooming and Delay Constrained Multicast Routing in IP over WDM Networks

Hong-Hsu Yen, Shih-Hsin University; Steven S. W. Lee, ITRI; Biswanath Mukherjee, UC-Davis

ON04-3 Performance Evaluation of the Grade-of-Service-based Routing Strategies for Optical Networks

Andrzej Szymanski, Artur Lason, Jacek Rzasa, Andrzej Jajszczyk, AGH University of Science and Technology

ON04-4 Network Planning Using GA For Regular Topologies

Jose Gutierrez, Mohamed Imine, Ole Madsen, Aalborg University

ON04-5 Clustering Large Optical Networks for Distributed and Dynamic Multicast

Mohammad Hasan, Jason Jue, The University of Texas at Dallas

ON04-6 Flow Aggregation and Light-tree Establishment in Multicast-Capable Optical Networks

Yi Zhu, Gang Jiang, Jason P. Jue, The University of Texas at Dallas

Thu, 22 May 2008, 10:45-12:30

Room 201-B, BICC

ON05: Survivability in Optical Networks

Chair: **Ahmed Kamal**, Iowa State University

ON05-1 Meta-Mesh Span Restoration and Increased Lightpath Routing in Sparse Network Topologies

John Doucette, Zhijie (Sam) Shen, University of Alberta

ON05-2 Distributed Hierarchical Monitoring and Alarm Management in Transparent Optical Networks

Sava Stanic, Suresh Subramaniam, The George Washington University

ON05-3 Provisioning of Survivable Multicast Sessions in Sparse Light Splitting WDM Networks

Xiong Wang, Sheng Wang, Lemin Li, Key lab of Broadband Optical Transmission and Communication Networks

ON05-4 Sizing Eligible Route Sets for Restorable Network Design and Optimization

Jude Akpuh, John Doucette, University of Alberta

ON05-5 Adaptive Reliable Multi-Path Provisioning in WDM Mesh Networks

Sheng Huang, Intel Corporation; Biswanath Mukherjee, University of California, Davis

ON05-6 Design of Shared Mesh Restoration Schemes with Traffic Load Balancing Constraint

Hassan Naser, Ming Gong, Lakehead University

Thu, 22 May 2008, 14:00-15:45

Room 201-B, BICC

ON06: Optical Packet Switching and Switch Fabric Architectures

Chair: **Jason Jue**, University of Texas at Dallas

ON06-1 Serial-mode Multicasting Scheme in the Optical Packet Switched Networks

Xin Liu, Hongxiang Wang, Lin Bai, Yuefeng Ji, Beijing University of Posts & Telecommunications

ON06-2 Performance Evaluation of QoS-Aware Optical Packet Switches

Vincenzo Eramo, Marco Listanti, Sapienza-Università di Roma; Raffaele Tiberio, Accenture

ON06-3 Multiple-Hop Routing in Ultrafast All-Optical Packet Switching Network Using Multiple PPM Routing Tables

Ming-Feng Chiang, Fary Ghassemlooy, Wai-Pang Ng, Northumbria University; Hoa Le Minh, University of Oxford; Ahmed Abd El Aziz, Northumbria University

ON06-4 FDL Design in Time-Wavelength Switched Optical Networks

Arush Gadkar, Suresh Subramaniam, The George Washington University

ON06-5 Simple Optical Fabrics for Scalable Terabit Packet Switches

Fabio Neri, Politecnico di Torino; Jorge Finochietto, Universidad Nacional de Cordoba; Roberto Gaudino, Guido Gavilanes Castillo, Politecnico di Torino

ON06-6 Space and Time Blocking versus Cost in All-Optical Banyan Networks

Olga Zadedyurina, Yoram Ofek, University of Trento; Achille Pattavina, Politecnico di Milano

Thu, 22 May 2008, 16:15-18:00

Room 201-B, BICC

ON07: Network Design and Traffic Engineering

Chair: Byrav Ramamurthy, University of Nebraska-Lincoln

ON07-1 Service Differentiation via Power Management in WDM Optical Networks

Quanyan Zhu, Laca Pavel, University of Toronto

ON07-2 A Simple Quality-of-Service-Based Connection Setup Management Approach for Optical Networks

Wissam Fawaz, Lebanese American University; Ken Chen, University of Paris 13; Chadi Abou-Rjeily, Zahi Nakad, Lebanese American University

ON07-3 Deadline-Driven Bandwidth Allocation with Flexible Transmission Rates in WDM Networks

Dragos Andrei, Marwan Batayneh, Suman Sarkar, Charles Martel, Biswanath Mukherjee, University of California, Davis

ON07-4 Cost-Efficient Transmitter/Receiver Deployment for Proactive Fault Diagnosis in All-Optical Networks

Yonggang Wen, Vincent W.S. Chan, Eric Swanson, MIT

ON07-5 Adaptive Multi-Layer Traffic Engineering with Shared Risk Group Protection

Tibor Cinkler, Péter Hegyi, Géza Geleji, János Szigeti, ákos Ladányi, Budapest University of Technology and Economics

ON07-6 Fundamental studies on ultra-high-speed optical LAN using optical circuit switching

Shigeo Shioda, Chiba University; Shu Namiki, National Institute of Advanced Industrial Science and Technology

Tue, 20 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

ON1p: Optical Networks and Systems (1)

ON1p-1 FSO Links with Spatial Diversity Over Strong Atmospheric Turbulence Channels

Theodoros Tsiftsis, Aristotle University of Thessaloniki; Harilaos Sandalidis, University of Central Greece; George Karagiannidis, Aristotle University of Thessaloniki; Murat Uysal, University of Waterloo

ON1p-2 Optimal Electrical Processing in Multilevel Optical Systems Insensitive to GVD and PMD

Giulio Colavolpe, Tommaso Foggi, University of Parma; Enrico Forestieri, Giancarlo Prati, Scuola Superiore Sant'Anna, Pisa, Italy

ON1p-3 Multiperiod Planning for Optical Networks - Approaches Based on Cost Optimization and Limited Budget

Clara Meusburger, Nokia Siemens Networks Technische Universität München; Dominic Schupke, Nokia Siemens Networks; Jörg Eberspächer, Technische Universität München

ON1p-4 Communications and Sensing of Illumination Contributions in a Power LED Lighting System

Jean-Paul M. G. Linnartz, Lorenzo Feri, Philips Research; Hongming Yang, Eindhoven University of Technology; Sel B. Colak, Tim C. W. Schenk, Philips Research

ON1p-5 An Experimental Signalling Enhancement to Efficiently Encompass WCC and Backup Sharing in GMPLS-enabled Wavelength-Routed Networks

Raul Muñoz, Ramon Casellas, Ricardo Martínez, CTTC

ON1p-6 Strictly Nonblocking f -cast d -ary Multi-log Networks under Fanout and Crosstalk Constraints

Yang Wang, Hung Ngo, SUNY at Buffalo; Xiaohong Jiang, Tohoku University

ON1p-7 2D Optical CDMA Technique Dedicated to Multimedia transmission

Mikael Morelle, Anne Julien-Vergonjanne, Jean-Pierre Cances, Jean-Michel Dumas, ENSIL/University of Limoges

Wed, 21 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

ON2p: Optical Networks and Systems (2)

ON2p-1 A 100 Gb/s and high-reliable physical-layer architecture for VSR and backplane Ethernet

Hidehiro Toyoda, Michitaka Okuno, Shinji Nishimura, Hitachi, Ltd.; Matsuaki Terada, Tokyo University of Agriculture and Technology

ON2p-2 A Fast and Efficient Segmented Signalling Protocol for GMPLS/WDM Optical Networks

Vijaya Saradhi Chava, Create-Net; Gollu Suresh Kumar, National University of Singapore; Luying Zhou, Institute for Infocomm Research; Mohan Gurusamy, National University of Singapore

ON2p-3 A distributed scheduling algorithm for an optical switching fabric

Andrea Bianco, Elisabetta Carta, Davide Cuda, Politecnico di Torino; Jorge Manuel Finochietto, Universidad Nacional de Cordoba; Fabio Neri, Politecnico di Torino

ON2p-4 Adaptive Optical Communication Through Turbulent Atmospheric Channels

Zhijun Zhao, Stephen Lyke, Michael Roggemann, Michigan Technological University

ON2p-5 Design of Reconfigurable Multiweight Wavelength-Time Optical Codes for Secure Multimedia Optical CDMA Networks

Nasaruddin St, Tetsuo Tsujioka, Osaka City University

ON2p-6 Supplementing non-simple p-Cycles with preconfigured lines

David Lastine, Arun Somani, Iowa State University

ON2p-7 Protection and Restoration from Link Failures in DWDM Networks: A Cross-Layer Study

Amir Askarian, Yuxiang Zhai, Suresh Subramaniam, George

Washington University; Yvan Pointurier, McGill University; Maite Brandt-Pearce, University of Virginia

Signal Processing for Communication Symposium

Tue, 20 May 2008, 14:00-15:45

Room 307, BICC

SP01: Advanced Topics in Signal Processing 1

Chair: **Dapeng Oliver Wu**, University of Florida

SP01-1 Margin Optimization in Digital Subscriber Lines

Employing Level-2 Dynamic Spectrum Management

Sumanth Jagannathan, Chan Soo Hwang, John Cioffi, Stanford University

SP01-2 Margin Optimization in Digital Subscriber Lines

Employing Level-1 Dynamic Spectrum Management

Sumanth Jagannathan, Chan Soo Hwang, John Cioffi, Stanford University

SP01-3 Common Mode Characterization and Channel Model Verification for Shielded Twisted Pair (STP) Cable

Milos Jakovljevic, UPM ETSIT-SSR; Thomas Magesacher, Lund University; Klas Ericson, Ericsson AB; Per Odling, Per Ola Borjesson, Lund University; Santiago Zazo, UPM ETSIT-SSR

SP01-4 Architecture and Experimental Evaluation of a 10Gb/s MLSD-Based Transceiver for Multimode Optical Fibers

Diego Crivelli, Hugo Carrer, Mario Hueda, Norman Swenson, Paul Voois, Oscar Agazzi, ClariPhy

SP01-5 Fast Cocyclic Jacket Transform Based on DFT

Zhu Chen, Moon Ho Lee, Wei Song, TaeChol Shin, Chonbuk National University

SP01-6 A Concept for Data-Aided Carrier Frequency Estimation at Low Signal-to-Noise Ratios

Susanne Godtmann, Niels Hadaschik, RWTH Aachen University; Wolfgang Steinert, Audens Telecommunications Consulting GmbH; Gerd Ascheid, RWTH Aachen University

Tue, 20 May 2008, 16:15-18:00

Room 307, BICC

SP02: Advanced Topics in Signal Processing 2

Chair: **Wai Ho Mow**, Hong Kong University of Science and Technology

SP02-1 Multi-Dimensional Network Function Estimation

Naventhan Mahadevan, Guy Nason, Alistair Munro, University of Bristol

SP02-2 Ultra-Wideband Fast Acquisition System for Positioning in an Underground Mining Environment

Yassine Salih Alj, Charles Despins, Prompt; Sofiène AFFES, INRS-E.M. & Telecommunications

SP02-3 Multidimensional Layered Forward Error Correction using Rateless Codes

Cornelius Hellge, Thomas Schierl, Thomas Wiegand, Fraunhofer HHI

SP02-4 Multilevel Structured Low-Density Parity-Check Codes

Nicholas Bonello, Sheng Chen, Lajos Hanzo, University of Southampton

SP02-5 IRTF: Image Retrieval Through Fuzzy Modeling

Abolfazl Lakdashti, Rouzbahan Uni.

SP02-6 Adaptive Decision Feedback Equalization Under Parallel Adaptation

Wee Gin Lim, University of Nottingham Malaysia Campus; Rodney A. Kennedy, Thushara D. Abhayapala, Australian National University

Wed, 21 May 2008, 8:30-10:15

Room 307, BICC

SP03: Multimedia Signal Processing

Chair: **Hung Nguyen**, The Aerospace Corporation

SP03-1 Unequal-Protected LT Code for Layered Video Streaming

Sheng-Kai Chang, Kai-Chao Yang, Jia-Shung Wang, National Tsing-Hua University

SP03-2 Contourlet Based Image Compression for Wireless Communication in Face Recognition System

Yanjun Yan, Rajani Muralaeddharan, Xiang Ye, Lisa Osadciw, Syracuse University

SP03-3 A Fast Intra/Inter Mode Decision Algorithm of H.264/AVC for Real-time Applications

Bin Zhan, Baochun Hou, Reza Sotudeh, University of Hertfordshire

SP03-4 A Practical Wavelet Domain LMK Algorithm for Predicting Multimedia Traffic

Hong Zhao, Embry Riddle Aeronautical University

SP03-5 Support for Digital VCR functionality over Network for H.264/AVC

Pengpeng Ni, University of Oslo; Damir Isovich, Mälardalen University

SP03-6 Robust Online Video Background Reconstruction Using Optical Flow and Pixel Intensity Distribution

Xiaodong Cai, Falah Ali, Elias Stipidis, University of Sussex

Wed, 21 May 2008, 10:45-12:30

Room 307, BICC

SP04: Channel Estimation & Equalization 1

Chair: **Char-Dir Chung**, National Taiwan University

SP04-1 Adaptive Decoding and Equalization for Time Reversal-Space Time Block-Coded Cooperative Diversity Systems

Abdulla Firag, Lee Garth, University of Canterbury

SP04-2 Novel Minimum Total-Model-Order Determination for the Inverse of Mixing-Phase Systems and Applications of Communications Equalization

Shih Yu Chang, National Tsing Hua University; Hsiao-Chun Wu, Louisiana State University

SP04-3 Efficient Turbo Frequency Domain Equalization Based on Symbol-Wise Detection

Baojin Li, Zhifeng Ruan, Yongyu Chang, Dacheng Yang, Beijing University of Posts and Telecommunications

SP04-4 Soft Electrical Equalization for Optical Channels

Henk Wymeersch, Moe Z. Win, Massachusetts Institute of Technology

SP04-5 A Robust Approach to Channel Estimation and Detection for Multicarrier Systems

khaled Amleh, Penn State University at Mont Alto; Hongbin Li, Stevens Institute of Technology

SP04-6 On Time-Varying FIR Decision Feedback Equalization of Doubly Selective Channels

Liyang Song, Jitendra Tugnait, Auburn University

Wed, 21 May 2008, 14:00-15:45

Room 306, BICC

SP05: Channel Estimation & Equalization 2

Chair: Tomoaki Ohtsuki, Keio University

SP05-1 Optimal Joint CFO and Channel Estimation for Multiuser MIMO-OFDM Systems

Jianwu Chen, Yik-Chung Wu, Tung-Sang Ng, The University of Hong Kong

SP05-2 A Carrier Frequency Offset Estimation Scheme Based on a Scalar Extended Kalman Filter for Uplink OFDM Systems

Xiangnian Zeng, Ali Ghayeb, Concordia University

SP05-3 Cyclic-Based Estimators for Synchronization of Windowed OFDM Systems

Farzad Moghimi, Said Nader-Esfahani, University of Tehran

SP05-4 Least-Squares Channel Estimation Assisted by Self-Interference Cancellation for Mobile PRP-OFDM Applications

Jia-Chin Lin, National Central University

SP05-5 Channel Identifiability for Blind Subspace-based Channel Estimator in Uplink MC-CDMA Systems

Lokesh Bheema Thiagarajan, NUS and I2R; Samir Attallah, UniSIM; Liang Ying Chang, Institute for Infocomm Research; Karim Abed Meraim, ENST

SP05-6 Data-Aided Joint Estimation of Carrier Frequency Offset and Frequency-Selective Time-Varying Channel

Nathan Ricklin, James Zeidler, University of California, San Diego

Wed, 21 May 2008, 14:00-15:45

Room 307, BICC

SP06: Channel Estimation & Equalization 3

Chair: Feifei Gao, National University of Singapore

SP06-1 Joint Channel Estimation and Data Detection for Multi-Input Multi-Output Single Carrier Cyclic-Prefix (MIMO-SCCP) Systems

The-Hanh Pham, National University of Singapore; Ying-Chang Liang, Institute for Infocomm Research; Nallanathan Arumugam, King's College London

SP06-2 Semi-Blind Spatial Equalisation for MIMO Channels with Quadrature Amplitude Modulation

Sheng Chen, Lajos Hanzo, Wang Yao, University of Southampton

SP06-3 Semi-Blind Channel Estimation For Linearly Precoded MIMO-CPSC

Yonghong Zeng, Ying-Chang Liang, Changlong Xu, Institute for Infocomm Research, Singapore

SP06-4 Equalisation of MIMO-OFDM Signals affected by Phase Noise and Clipping and Filtering

Steffen Bittner, Peter Zillmann, Gerhard Fettweis, Technische Universität Dresden

SP06-5 Low Complexity Blind Carrier Frequency Offset Estimation for MIMO-OFDM systems

Huiming Wang, Qinye Yin, Le Ding, Ke Deng, Xi'an Jiaotong University

SP06-6 Graph-Based Soft Channel and Data Estimation for MIMO Systems with Asymmetric LDPC Codes

Tianbin Wo, University of Kiel; Chunhui Liu, RWTH Aachen University; Peter Adam Hoeher, University of Kiel

Wed, 21 May 2008, 16:15-18:00

Room 306, BICC

SP07: OFDM 1

Chair: Heidi Steendam, Ghent University

SP07-1 Distributed Adaptive Bit-loading for Spectrum Optimization in Multi-user Multicarrier Systems

Sumanth Jagannathan, John Cioffi, Stanford University

SP07-2 Iteratively Detected Sphere Packing Modulated OFDM: An Exit Chart Perspective

Lei Xu, Mohammed El-Hajjar, Osamah Alamri, Sheng Chen, Lajos Hanzo, University of Southampton

SP07-3 A New Algorithm for OFDM Joint Data Detection and Phase Noise Cancellation

Yu Gong, Xia Hong, The University of Reading

SP07-4 Compensation of IQ Imbalance and DC Offset for OFDM Transmission Over Frequency Selective Channels

Hsien-Yu Tseng, Wen-Jen Cho, Ting-Kang Chang, See-May Phoong, National Taiwan University; Yuan-Pei Lin, National Chiao Tung University

SP07-5 Interference Mitigation in Turbo-coded OFDM Systems using Robust LLRs

Sheetal Kalyani, Motorola India Research Labs; Krishnamurthy Giridhar, Indian Institute of Technology Madras

SP07-6 OFDM/OQAM with Hermitian Symmetry: Design and Performance for Baseband Communication

HaoLlin, Pierre Siohan, France Telecom

Wed, 21 May 2008, 16:15-18:00

Room 307, BICC

SP08: OFDM 2

Chair: Timothy O'Farrell, University of Swansea

SP08-1 Repetition Code Subblocking for Partial Transmit Sequence OFDM

Abolfazl Ghassemi, Aaron Gulliver, University of Victoria

SP08-2 Primary User Signal Detection in OFDM Based Cognitive Radios

Chien-Hwa Hwang, Shih-Chang Chen, National Tsing Hua University

SP08-3 An Effective Clipped Companding Scheme for PAPR Reduction of OFDM Signals

Jaewoon Kim, Yoan Shin, Soongsil University

SP08-4 Precoded Single Carrier Data Transmission with Orthogonal Frequency Domain Multiplexing Pilots

Fan Wang, Jun Tan, Motorola Inc; Ye (Geoffrey) Li, Georgia Institute of Technology

SP08-5 New Transmit Precoding for a Hidden Pilot Design in MIMO-OFDM Systems

Byung Wook Kim, KAIST; Sung-Yoon Jung, Samsung Electronics Co., Ltd.; Dong-Jo Park, KAIST

SP08-6 MIMO-OFDM Precoder for Minimizing BER Upper Bound of MLD under Imperfect CSI

Boonsarn Pitakdumrongkija, Kazuhiko Fukawa, Hiroshi Suzuki, Tokyo Institute of Technology

Thu, 22 May 2008, 8:30-10:15

Room 307, BICC

SP09: OFDM 3

Chair: Shigeru Shimamoto, Waseda University

SP09-1 Opportunistic Scheduling and Beamforming for MIMO-OFDMA Downlink Systems with Reduced Feedback

Man On Pun, Princeton University; Kyeongjin Kim, Nokia; H. Vincent Poor, Princeton University

SP09-2 Iterative DA/DD Channel Estimation for KSP-OFDM

Dieter Van Welden, Heidi Steendam, Marc Moeneclaey, Ghent University

SP09-3 Joint Frequency Offset and Channel Estimation Using Rao-Blackwellized Particle Filter for Uplink MIMO-OFDMA Systems

Zheng Jiang, Zhongnian Li, Xin Zhang, Dacheng Yang, Beijing University of Posts and Telecommunications

SP09-4 On The Use of Virtual Pilots with Decision Directed Method in OFDM Based Cognitive Radio Channel Estimation Using 2x1-D Wiener Filter

Ibrahim Budiarjo, Ikhsan Rashad, Homayoun Nikookar, IRCTR TU DELFT

SP09-5 QRD-Based Precoded MIMO-OFDM Systems With Reduced Feedback

Kyeongjin Kim, Nokia; Man On Pun, Princeton University; Ronald Iltis, University of California, Santa Barbara

SP09-6 Pilot-Aided Low-Complexity CFO and I/Q Imbalance Compensation for OFDM Systems

Hai Lin, Osaka Prefecture University; Xu Zhu, The University of Liverpool; Katsumi Yamashita, Osaka Prefecture University

Thu, 22 May 2008, 10:45-12:30

Room 307, BICC

SP10: MIMO 1

Chair: Mohammad Ghavami, Kings College London

SP10-1 A Novel Technique for Efficient Hardware Simulation of Spatiotemporally Correlated MIMO Fading Channels

Amirhossein Alimohammad, Saeed Fouladi Fard, Bruce Cockburn, Christian Schlegel, University of Alberta

SP10-2 A Flexible VLSI Architecture for Extracting Diversity and Spatial Multiplexing Gains in MIMO Channels

Chia-Hsiang Yang, Dejan Markovic, University of California, Los Angeles

SP10-3 MIMO System with Relative Phase Difference Time-Shift Modulation in Rician Fading Environments

Kenichi Kobayashi, Takao Someya, Tokyo University of Science; Tomoaki Ohtsuki, Keio University; Sigit Jarot, Tsuyoshi

Kashima, Nokia Japan

SP10-4 Selective Spanning with Fast Enumeration: A Near Maximum-Likelihood MIMO Detector Designed for Parallel Programmable Baseband Architectures

Min Li, Bruno Bougard, Eduardo Estraviz Lopez, Anre Bourdoux, David Novo, Liesbet Van Der Perre, Francky Catthoor, IMEC

SP10-5 Design of Highly-Parallel, 2.2Gbps Throughput Signal Detector for MIMO Systems

Liang Liu, Xiaojing Ma, Fan Ye, Junyan Ren, FUDAN University

SP10-6 An efficient MIMO V-BLAST decoder based on a dynamically reconfigurable FPGA including its reconfiguration management

Hongzhi Wang, Pierre Leray, Jacques Palicot, SUPELEC/IETR

Thu, 22 May 2008, 14:00-15:45

Room 307, BICC

SP11: MIMO 2

Chair: Jiangzhou Wang, University of Kent

SP11-1 Over-Complete Source-Mapping Aided AMR-WB MIMO Transceiver Using Three-Stage Iterative Detection

Noor Othman, Mohammed El-Hajjar, Anh Pham Quang, Osamah Alamri, Soon Xin Ng, Lajos Hanzo, University of Southampton

SP11-2 An Improved Fast Recursive Algorithm for V-BLAST With Optimal Ordered Detections

Yue Shang, Xiang-Gen Xia, University of Delaware

SP11-3 Linear Transceiver Design for Multiuser MIMO Downlink

Daofeng Xu, Southeast University; Yongming Huang, Luxi Yang, Bin Li, Huawei Technologies, Co., Ltd.

SP11-4 Orthogonal Space-Time Block Codes design Using Jacket Transform for MIMO Transmission System

Wei Song, Moon Ho Lee, Chonbuk National University; Guihua Zeng, Shanghai Jiaotong University

SP11-5 Low-Complexity Factor Graph Receivers for Spectrally Efficient MIMO-IDMA

Clemens Novak, Franz Hlawatsch, Gerald Matz, Vienna University of Technology

SP11-6 A Systematic Luby Transform Coded V-BLAST System

Thanh Dang Nguyen, Mohammed El-Hajjar, Lie-Liang Yang, Lajos Hanzo, University of Southampton

Thu, 22 May 2008, 16:15-18:00

Room 307, BICC

SP12: Detection Techniques

Chair: Luc Deneire, University of Nice

SP12-1 Near-MAP Detectors Based on Probabilistic Data Association for Asynchronous MC-CDMA Systems

Tiziano Bianchi, Lorenzo Francalanci, University of Florence

SP12-2 Narrowband Interference Resilient Receiver Design for Unknown UWB Signal Detection

Onur Ozdemir, Syracuse University; Zafer Sahinoglu, Jinyun Zhang, Mitsubishi Electric Research Laboratories

SP12-3 A Linear Fractional Semidefinite Relaxed ML Approach to Blind Detection of 16-QAM Orthogonal Space-Time Block Codes

Chien-Wei Hsin, Tsung-Hui Chang, National Tsing Hua University; Wing-Kin Ma, The Chinese University of Hong Kong; Chong-Yung Chi, National Tsing Hua University

SP12-4 Near-Optimum Soft-Output

Ant-Colony-Optimization Based Multiuser Detection for the DS-CDMA Uplink

Chong Xu, Lie-Liang Yang, Rob Maunder, Lajos Hanzo, University of Southampton

SP12-5 Complexity Reduction of Maximum-Likelihood Multiuser Detection (ML-MUD) Receivers with Carrier Interferometry Codes in MC-CDMA

Layla Tadjpour, University of Southern California; Shang-Ho Tsai, National Chiao Tung University; C.-C. Jay Kuo, University of Southern California

SP12-6 A Detection Algorithm for The Identification of the Free Spectral Resources in DVB-T Bands

Pierre Jallon, CEA LETI - MINATEC

Thu, 22 May 2008, 16:15-18:00

Room 201-A, BICC

SP13: Multi Antenna Systems

Chair: Daniel K. C. So, University of Manchester

SP13-1 Direction-of-Arrival Estimation of M-1 Signals based on Unitary-ESPRIT and Successive-Selection Technique with an M-Element Hexagonal Array

Eddy Taillefer, Jun Cheng, Yoichiro Watanabe, Doshisha University

SP13-2 Robust Adaptive Beamformer with LMI Constraints on Magnitude Response

Zhu Liang Yu, Wee Ser, Meng Hwa Er, Huawei Chen, NTU

SP13-3 Maximum Ratio Combining Precoding for Multi-Antenna Relay Systems

Hamid Reza Bahrami, Tho Le-Ngoc, McGill University

SP13-4 Novel Adaptive Antenna Array Based on Robust Semidefinite Programming

Zhu Liang Yu, Wee Ser, Meng Hwa Er, School of EEE, NTU

SP13-5 Combining Eigen-Beamforming and Orthogonal Space-Time Block Coding for Secondary Usage of Spectrum

Md Habibur Islam, Ying-Chang Liang, Anh Tuan Hoang, Institute for Infocomm Research

SP13-6 Neural Network Nonlinear MIMO Channel Identification and Receiver Design

Mohamed Ibnkahla, Al-Mukhtar Al-Hinai, Queen's University

Tue, 20 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

SP1p: Signal Processing for Wireless Systems 1

Chair: Donglai Xu, University of Teesside

SP1p-1 Antenna/Relay Selection for Coded Wireless Cooperative Networks

Mohamed Elfituri, Ali Ghrayeb, Walaa Hamouda, Concordia University

SP1p-2 Finite-Resolution Digital Receiver Design for Impulse Radio Ultra-Wideband Communication

Lei Ke, Zhengdao Wang, Iowa State University; Huarui Yin, Weilin Gong, University of Sci. and Tech. of China

SP1p-3 Optimum Combining in Rician Fading: Performance Analysis in Asymptotic SNR Regimes

Raymond Louie, University of Sydney/CSIRO; Matthew McKay, Hong Kong University of Science Technology; Iain Collings, CSIRO

SP1p-4 DS-CDMA Chip Waveforms with Maximally Concentrated Spectra

Ritesh Sood, Hong Xiao, University of California, Davis

SP1p-5 An Improved Decorrelator MUD for Asynchronous MC-CDMA with Extended Observation Window

Samer Hijazi, Agere Systems; Balasubramaniam Natarajan, Kansas State University

SP1p-6 Spreading Codes Enabling Warp Converging Wiener Filters for Multiuser Detection in CDMA Systems

Xiaoli Wang, Hongya Ge, New Jersey Institute of Technology

SP1p-7 Dynamic Code Allocation for Constructive Interference Exploitation in DS-CDMA Systems

Christos Masouros, Emad Alsusa, Ulises Pineda Rico, U. of Manchester

SP1p-8 Particle Filtering for Mobility Enhanced Adaptive Sectoring for CDMA Uplink Capacity Maximization

Alex Wang, Vikram Krishnamurthy, University of British Columbia

Tue, 20 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

SP2p: Signal Processing for Wireless Systems 2

Chair: **Zhiqiang Wu**, Wright State University

SP2p-1 Semi-Data-Aided Nonlinear Carrier Recovery for BPSK Burst-Mode Transmissions

Yunpeng Hu, Hongyi Yu, Information Science and Technology Institute

SP2p-2 Application of Jacobi Algorithm in Frequency Selective Channels

Pei Xiao, Mathini Sellathurai, Queen's University Belfast

SP2p-3 Performance of Cooperative Spatial-interleaved Superposition Modulation in Fading Multiple-Access Channels

Tao Yang, Jinhong Yuan, University of New South Wales

SP2p-4 Moments Based Blind Calibration in Mobile Sensor Networks

Chao Wang, Parameswaran Ramanathan, Kewal Saluja, UW-Madison

SP2p-5 Wideband Spectrum Sensing in Cognitive Radio Networks

Zhi Quan, UCLA; Shuguang Cui, Texas A&M University; Ali H. Sayed, UCLA; H. Vincent Poor, Princeton University

SP2p-6 A Modified DVB-T System Architecture with Multi-carrier Multi-code Transmission and MPIC Based Reception

You-Tsai Jeng, Meng-Lin Ku, Chia-Chi Huang, National Chiao Tung University

SP2p-7 A Performance-Optimized Design of Receiving Filter for Non-Ideally Shaped Modulated Signals

Tengfei Xing, Yafeng Zhan, Jianhua Lu, Tsinghua University

Thu, 22 May 2008, 10:45-12:30

Exhib. No.2 Hall, BICC

SP3p: Signal Processing for Wireless Systems 3

Chair: **Xiang-Gen Xia**, University of Delaware

SP3p-1 Tracking of Time-Variant Radio Propagation Paths using Particle Filtering

Xuefeng Yin, Gerhard Steinboeck, Gunvor Elisabeth Kirkelund, Troels Pedersen, Aalborg University; Peter Blattnig, Alain Jaquier, Armasuisse; Bernard H. Fleury, Aalborg University

SP3p-2 Signal Compression and Reconstruction in Clustered Sensor Networks

Alessandro Nordin, Carla-Fabiana Chiasserini, Armando Muscariello, Politecnico di Torino

SP3p-3 Bluetooth Interference Mitigation in 802.11g

Sumei SUN, Rab Nawaz, Institute for Infocomm Research

SP3p-4 Carrier Frequency Offset Estimation Based on the Wrapped Phase Entropy

Yuanling Huang, Qiang Yuan, Yourong Lu, Southwest Electronics and Telecommunication Technology Research Institute

SP3p-5 Receiver Designs For MIMO HSDPA

Shakti Prasad Shenoy, Institut Eurecom; Irfan Ghauri, Infineon Technologies France; Dirk Slock, Institut Eurecom

SP3p-6 Novel Decision-Aided Channel Estimation for TDS-OFDM Systems

Shigang Tang, Kewu Peng, Tsinghua University; Ke Gong, Tianjin University; Jian Song, Changyong Pan, Zhixing Yang, Tsinghua University

SP3p-7 Improving Anchor Position Accuracy for 3-D Localization in Wireless Sensor Networks

Kegen Yu, Y. Jay Guo, CSIRO ICT Centre

Wireless Communication and Systems Symposium

Tue, 20 May 2008, 14:00-15:45

Room 302, BICC

WC01: OFDMA I

Chair: **Jun Cai**, University of Manitoba

WC01-1 Energy Efficient Design in Wireless OFDMA

Guowang Miao, Georgia Institute of Technology; Nageen Himayat, Intel Corporation; Ye (Geoffrey) Li, Georgia Institute of Technology; David Bormann, Intel Corporation

WC01-2 Improved OFDMA Uplink Frequency Offset Estimation via Cooperative Relaying: AF or DcF?

Zhongshan Zhang, Wei Zhang, Chintha Tellambura, University of Alberta

WC01-3 Performance Analysis of Downlink OFDMA Frequency Scheduling with Limited Feedback

Jouko Leinonen, University of Oulu; Jyri Hämäläinen, Helsinki University of Technology; Markku Juntti, University of Oulu

WC01-4 Weighted Network Utility Maximization Aided by Combined Queueing Priority in OFDMA Systems

Jianwei Wang, Peking University; Timo Korhonen, Helsinki University of Technology; Yuping Zhao, Peking University

WC01-5 Integrating multiuser dynamic OFDMA into IEEE 802.11 WLANs - LLC/MAC extensions and system performance

Stefan Valentin, Thomas Freitag, Holger Karl, University of Paderborn

WC01-6 Dynamic Resource Allocation in High Speed Mobile OFDMA System

Min Gong, Chao Zhang, Jianhua Lu, Xiaokang Lin, Tsinghua Univ.

Tue, 20 May 2008, 14:00-15:45

Room 303, BICC

WC02: Multi-user MIMO I,

Chair: **Matthew McKay**,

Hong Kong University of Science and Technology

WC02-1 A Lattice-Theoretic Analysis of Vector Perturbation for Multi-User MIMO Systems

Daniel J. Ryan, University of Sydney; Iain B. Collings, CSIRO ICT Centre; I. Vaughan L. Clarkson, University of Queensland; Robert W. Heath Jr., University of Texas at Austin

WC02-2 Ergodic Capacity of LTE Downlink Multiuser MIMO Systems

Zihuai Lin, Branka Vucetic, University of Sydney; Jian Mao, SR Telecom

WC02-3 Generalization of Channel Inversion Algorithms for Multiuser MIMO Downlink Systems

Hakjea Sung, Sang-Rim Lee, Inkyu Lee, Korea University

WC02-4 Optimal Multi-User MIMO Linear Precoding Based on Particle Swarm Optimization

Shu Fang, Li-hua Li, Ping Zhang, Beijing University of Posts and Telecom.

WC02-5 Techniques for Multi-user MIMO with Two-way Training

Krishna Gomadam, University of California, Irvine; Haralabos Papadopoulos, Carl-Erik Sundberg, DoCoMo USA Labs

WC02-6 An Efficient Transmission Scheme with Limited Feedback in Multiuser MIMO Systems

Yubo Yang, Lin Tian, Jihua Zhou, Yi Sun, Jinglin Shi, Zhongcheng Li, Chinese Academy of Sciences

Tue, 20 May 2008, 14:00-15:45

Room 305-A, BICC

WC03: Adaptive Modulation

Chair: Youjian Liu, University of Colorado at Boulder

WC03-1 Optimizing Adaptive Modulation in Wireless Networks via Utility Maximization

Daniel O'Neill, Andrea Goldsmith, Stephen Boyd, Stanford University

WC03-2 Flexible Adaptive-Modulation-and-Coding Tables for a Wireless Network

Edward Jang, Stanford University; Chan-Soo Hwang, Samsung Advanced Institute of Technology; John Cioffi, Stanford University

WC03-3 Efficient Adaptive Modulation and Coding techniques for WiMAX systems

Dania Marabissi, Daniele Tarchi, Romano Fantacci, Francesco Balleri, University of Florence

WC03-4 The Capacity Loss of Adaptive Modulation and Coding Schemes with Channel Feedback Delay

Dongdong Li, Mazin Al-Shalash, Huawei Technologies

WC03-5 Performance Analysis of Adaptive M-QAM for Rayleigh Fading Cooperative Systems

Tyler Nechiporenko, Khoa Phan, Chintla Tellambura, University of Alberta; Ha Nguyen, University of Saskatchewan

WC03-6 Queuing Analysis on MIMO Systems with Adaptive Modulation and Coding

Sheng Zhou, Tsinghua University; Kai Zhang, Hong Kong Applied Science & Technology Research Institute; Zhisheng Niu, Tsinghua University; Yang Yang, University College London (UCL)

Tue, 20 May 2008, 14:00-15:45

Room 305-B, BICC

WC04: Cognitive Radio I

Chair: Carlos Cordeiro, Intel Corporation

WC04-1 Secure Cooperative Sensing Techniques for Cognitive Radio Systems

Praveen Kaligineedi, Majid Khabbazzian, Vijay Bhargava, The University of British Columbia

WC04-2 Cooperative Spectrum Sensing Optimization in Cognitive Radio Networks

Wei Zhang, Hong Kong University of Science Technology; Ranjan K. Mallik, Indian Institute of Technology - Delhi; Khaled Ben Letaief, Hong Kong University of Science and Technology

WC04-3 A Probability-based Spectrum Sensing Scheme for Cognitive Radio

Jun Ma, Ye (Geoffrey) Li, Georgia Institute of Technology

WC04-4 Spectrum Sensing for OFDM Systems Employing Pilot Tones and Application to DVB-T OFDM

Hou-Shin Chen, Rutgers University; Wen Gao, Thomson CR; David Daut, Rutgers University

WC04-5 Spectrum leasing via distributed cooperation in cognitive radio

Igor Stanojev, Osvaldo Simeone, Yeheskel Bar-Ness, NJIT; Takki Yu, Samsung Electronics Co., Ltd.

WC04-6 Sliding-Window Algorithm for Asynchronous Cooperative Sensing in Wireless Cognitive Networks

Chengqi Song, Hong Kong University of Science Technology; Qian Zhang, Hong Kong University of Science and Technology

Tue, 20 May 2008, 14:00-15:45

Room 306, BICC

WC05: WiMA

Chair: Zhifeng Tao, Mitsubishi Electric Research Laboratories

WC05-1 Relay Station Placement in IEEE 802.16j Dual-Relay MMR Networks

Bin Lin, University of Waterloo; Pin-Han Ho, Liang-Liang Xie, Xuemin Shen, University of Waterloo

WC05-2 Inter-Cell Interference Management in WiMAX Downlinks by A Stackelberg Game between BSs

Yingda Chen, Lehigh University; Koon Hoo Teo, Mitsubishi Electric Research Labs; Shalinee Kishore, Lehigh University; Jinyun Zhang, Mitsubishi Electric Research Labs

WC05-3 Receive Correlation-Based User Scheduling for Collaborative Spatial Multiplexing Systems

Jin-Woo Lee, Yong-Hwan Lee, Seoul National University

WC05-4 Performance Analysis of Weighted Proportional Fairness Scheduling in IEEE 802.16 Networks

Fen Hou, James She, Pin-Han Ho, Xuemin (Sherman) Shen, University of Waterloo

WC05-5 Antenna Selection for Next Generation IEEE 802.16 Mobile Stations

Chun Nie, Polytechnic University; Zhifeng Tao, Mitsubishi Electric Research Laboratories; Neelesh B. Mehta, Indian Institute of Science; Andreas F. Molisch, Jinyun Zhang, Mitsubishi Electric Research Laboratories; Toshiyuki Kuze, Mitsubishi Electric Corporation; Shivendra Panwar, Polytechnic University

WC05-6 QoS-Guaranteed Scheduling and Resource Allocation Algorithm for IEEE 802.16 OFDMA System

Xinning Zhu, Jiachuan Huo, Beijing University of Posts and Telecommunications

Tue, 20 May 2008, 16:15-18:00

Room 302, BICC

WC06: OFDMA II

Chair: **Himal Suraweera**, Victoria University

WC06-1 An Improved Scheme for Initial Ranging in OFDMA-based Networks

Luca Sanguinetti, Michele Morelli, University of Pisa; H. Vincent Poor, Princeton University

WC06-2 Adaptive Subcarrier Allocation Algorithms in Wireless OFDMA Systems

Dania Marabissi, Daniele Tarchi, Romano Fantacci, Alessandro Biagioni, University of Florence

WC06-3 Rate-Maximization Scheduling for Downlink OFDMA with Long Term Rate Proportional Fairness

Yao Ma, Iowa State University

WC06-4 Reducing Symbol Loss Probability in the Downlink of an OFDMA Based Wireless Network

Amin Alamdar Yazdi, Sameh Sorour, Shahrokh Valaee, University of Toronto; Ronny Yongho Kim, LG Electronics

WC06-5 Carrier-Frequency Offset Estimation for OFDMA Uplink With Generalized Subcarrier-Assignment

Zhongjun Wang, Wipro Techno Centre (Singapore) Pte Ltd; Yan Xin, National University of Singapore; George Mathew, LSI Corporation

WC06-6 A Survey on the Envelope Fluctuations of DFT Precoded OFDMA Signals

Tobias Frank, Anja Klein, TU Darmstadt; Thomas Haustein, NSN

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Room 303, BICC

WC07: Multi-user MIMO II,

Chair: **Andreas Molisch**, Mitsubishi Electric Research Laboratory

WC07-1 Regularized Channel Inversion for Multiple-Antenna Users in Multiuser MIMO Downlink

Heunchul Lee, Kwangwon Lee, Korea University; Bertrand Hochwald, Beceem Communication; Inkyu Lee, Korea University

WC07-2 Multiuser MIMO Downlink with Limited Feedback using Transmit-Beam Matching

Tae Hyun Kim, The University of Illinois at Urbana-Champaign; Robert Heath, The University of Texas at Austin; Sunghyun Choi, Seoul National University

WC07-3 Normal Graphs for Downlink Multiuser MIMO Scheduling

Jung-Chieh Chen, National Kaohsiung Normal University; Cheng-Hsuan Wu, National Tsing Hua University; Chao-Kai Wen, MediaTek Inc.; Yao-Nan Lee, National Tsing Hua

University; Hsin-Yi Lu, National Kaohsiung Normal University; Pangan Ting, Industrial Technology Research Institute

WC07-4 Robust Transceiver Optimization in Downlink Multiuser MIMO Systems with Channel Uncertainty

Nikola Vucic, Fraunhofer Heinrich-Hertz-Institut HHI; Holger Boche, Shuying Shi, Technical University of Berlin

WC07-5 Multiuser MIMO Downlink Beamforming Based on Group Maximum SINR Filtering

Yu-Han Yang, Shih-Chun Lin, Hsuan-Jung Su, National Taiwan University

WC07-6 Joint Transmitter-Receiver Design for the Downlink Multiuser Spatial Multiplexing MIMO System

Ppengfei Ma, Wenbo Wang, Xiaochuan Zhao, Kan Zheng, Beijing University of Posts and Telecommunications

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Room 305-A, BICC

WC08: Delay Optimal Design

Chair: **Sennur Ulukus**, University of Maryland

WC08-1 Delay-minimal Transmission for Energy Constrained Wireless Communications

Jing Yang, Sennur Ulukus, University of Maryland

WC08-2 Delay-optimal hybrid ARQ protocol design for channels and receivers with memory as a stochastic control problem

Achilleas Anastasopoulos, University of Michigan

WC08-3 Distributive Delay-Sensitive Cross-Layer Design for OFDMA Systems

David Shui Wing Hui, Vincent Kin Nang Lau, Hong Kong University of Science and Technology

WC08-4 Optimizing Delay Performance over MIMO Fading Channels with Adaptive Transmission

Jalil Seifali Harsini, Farshad Lahouti, University of Tehran

WC08-5 Delay Optimization in Cooperative Relaying with Cyclic Delay Diversity

Xuesong Li, Slimane Ben Slimane, Bo Zhou, Nauroze Syed, Mohammad Abu Dheim, Wireless@KTH

WC08-6 A Joint Coding and Scheduling Method for Delay Optimal Cognitive Multiple Access

Wei Chen, Tsinghua University; Khaled Ben-Letaief, The Hong Kong University of Science & Technology; Zhigang Cao, Tsinghua University

Tue, 20 May 2008, 16:15-18:00

Room 305-B, BICC

WC09: Cognitive Radio II

Chair: **Cheng-Xiang Wang**, Heriot-Watt University

WC09-1 Multi-band Power and Rate Control for Cognitive Radios with Energy Constraints: A Dynamic Programming Approach

Long Gao, Shuguang Cui, Texas A&M University

WC09-2 Optimal Power Allocation for Fading Channels in Cognitive Radio Networks under Transmit and Interference

Power Constraints

Xin Kang, National University of Singapore; Ying-Chang Liang, Institute for Infocomm Research; Nallanathan Arumugam, King's College London

WC09-3 A Game-theoretic Framework for Interference Management through Cognitive Sensing

Yingda Chen, Lehigh University; Koon Hoo Teo, Mitsubishi Electric Research Labs; Shalinee Kishore, Lehigh University; Jinyun Zhang, Mitsubishi Electric Research Labs

WC09-4 Performance Analysis of Cognitive Radio Networks with Average Interference Power Constraints

Xuemin Hong, Cheng-Xiang Wang, Heriot-Watt University; Hsiao-Hwa Chen, National Cheng Kung University; John Thompson, University of Edinburgh

WC09-5 Repeated Spectrum Sharing Game with Self-Enforcing Truth-Telling Mechanism

Yongle Wu, Beibei Wang, K. J. Ray Liu, University of Maryland

WC09-6 Opportunistic use of 3G uplink licensed bands

Paulo Marques, Joaquim Bastos, Atilio Gameiro, IT

Tue, 20 May 2008, 16:15-18:00

Room 306, BICC

WC10: BICM

Chair: Keith Q. T. Zhang, City University of HongKong

WC10-1 An Improved Soft-Output Trellis/Tree Iterative Decoder for high-order BICM on MIMO Frequency Selective Rayleigh Fading Channels

Kitty K.Y. Wong, Peter J. McLane, Queen's University

WC10-2 New Mapping Schemes for Multi-dimensional Constellation in MIMO-BICM-ID Systems

Alireza Rabbani Abolfazli, Yousef Shayan, Xiaofang Wang, Concordia University

WC10-3 Power Allocation for Goodput Optimization in BICM-OFDM systems

Ivan Stupia, University of Pisa; Luc Vandendorpe, Jerome Louveaux, Université Catholique de Louvain; Filippo Giannetti, Vincenzo Lottici, Nunzio Aldo D'Andrea, University of Pisa

WC10-4 Adaptive Bit Loading for BICM-OFDM with Square Lattice QAM Constellations

Stephan Sand, Christian Mensing, German Aerospace Center (DLR); Carlo Mutti, ASSA ABLOY ITG; Armin Wittneben, ETH Zurich

WC10-5 Performance Evaluation of BICM-OFDM Systems Impaired by UWB Interference

Amir Nasri, Robert Schober, Lutz Lampe, University of British Columbia

WC10-6 Bit-Level Deterministic Sequential Monte Carlo Method for MIMO Wireless Systems

Yuan Yang, Jun-feng Hu, Hai-lin Zhang, Xidian University

Wed, 21 May 2008, 8:30-10:15

Room 302, BICC

WC11: OFDM I

Chair: Erdal Panayirci, Kadir Has University

WC11-1 Theoretical Analysis of Performance Degradation due to Phase Noise and I/Q Imbalance in MQAM-OFDM Systems

Wang Yin, Northern Electronics Instrument Institute and Tsinghua Univ.; Gong Ke, Chen Zhaowu, Tsinghua Univ.

WC11-2 Design and Performance Analysis of the SPW method for PAPR Reduction in OFDM Systems

Heung-Gyoon Ryu, Sang Burm Ryu, Chungbuk National University

WC11-3 On Power/Bandwidth Efficient Clipped-OFDM and SC/FDE Transmission Schemes with Reduced CP Overhead

Paulo Torres, EST-IPCB; Antonio Gusmao, CAPS-IST

WC11-4 A New Adaptive OFDM System with Precoded Cyclic Prefix for Cognitive Radio

Xianbin Wang, Univ. of Western Ontario; Yiyan Wu, Communications Research Centre Canada; Hsiao-Chun Wu, Louisiana State University

WC11-5 Multi-User OFDM System Performance Subject to Control Channel Reliability in a Multi-Cell Environment

Mathias Bohge, Adam Wolisz, Technische Universität Berlin; Anders Furuskär, Magnus Lundevall, Ericsson Research

WC11-6 Analysis of OFDM Signals in Nonlinear High Power Amplifier with Memory

Vivek Bohara, See Ho Ting, Nanyang Technological University

Wed, 21 May 2008, 8:30-10:15

Room 303, BICC

WC12: MIMO BC

Chair: Wei Zhang, Hong Kong University of Science and Technology

WC12-1 Efficient User Scheduling under Low Rate Feedback for Correlated MIMO Broadcast Channels

Wei Xu, Chunming Zhao, Southeast University; Zhi Ding, University of California at Davis

WC12-2 On the Maximum Weighted Sum-Rate of MIMO Gaussian Broadcast Channels

Jia Liu, Y. Thomas Hou, Hanif D. Sherali, Virginia Polytechnic Institute and State University

WC12-3 Exact Sum-Rate Analysis of MIMO Broadcast Channels with Random Unitary Beamforming Based on Quantized SINR Feedback

Hong-Chuan Yang, Peng Lu, University of Victoria; Hyung-Ki Sung, Young-Chai Ko, Korea University

WC12-4 A lower bound to the sum-rate of MIMO broadcast channels with limited-rate feedback

Yubin Shao, Kunming University of Science Technology; Jinhong Yuan, The University of New South Wales

WC12-5 Weighted Sum Rate Optimization for Cognitive Radio MIMO Broadcast Channels

Lan Zhang, Yan Xin, National University of Singapore; Ying-Chang Liang, Institute of Infocomm Research

WC12-6 Multi-User Diversity vs. Accurate Channel Feedback for MIMO Broadcast Channels
Niranjay Ravindran, Nihar Jindal, University of Minnesota

Wed, 21 May 2008, 8:30-10:15
Room 305-A, BICC

WC13: Opportunistic Scheduling

Chair: **Angel Lozano**, Universitat Pompeu Fabra (UPF)

WC13-1 Distributed Opportunistic Scheduling for MIMO Ad-Hoc Networks

Man On Pun, Princeton University; Weiyang Ge, Arizona State University; Dong Zheng, NextWave Wireless Inc.; Junshan Zhang, Arizona State University; H. Vincent Poor, Princeton University

WC13-2 Queuing Delay and Buffer Distribution of Two-User Opportunistic Scheduling Schemes in Wireless Networks

Md. Hossain, McGill University; Vijay Bhargava, University of British Columbia; Mohamed-Slim Alouini, TAMU-Q

WC13-3 Achievable Rates and Fairness in Rateless Coded Decode-and-Forward Half-Duplex and Full-Duplex Opportunistic Relaying

Norman C. Beaulieu, University of Alberta

WC13-4 On the Opportunistic Multicasting in OFDM-based Cellular Networks

Ulas Kozat, DoCoMo USA Labs; Qi Qu, UCSD

WC13-5 Distributed Opportunistic Scheduling For Ad-Hoc Communications Under Noisy Channel Estimation

Dong Zheng, NextWave Wireless Inc.; Man On Pun, Princeton University; Weiyang Ge, Junshan Zhang, Arizona State University; H. Vincent Poor, Princeton University

WC13-6 SINR Analysis of Opportunistic MIMO-SDMA Downlink Systems with Linear Combining

Man On Pun, Princeton University; Visa Koivunen, Helsinki University of Technology; H. Vincent Poor, Princeton University

Wed, 21 May 2008, 8:30-10:15
Room 305-B, BICC

WC14: Relay Networks I

Chair: **Fu-Chun Zheng**, The University of Reading

WC14-1 Optimal Effective Capacity for Cooperative Relay Networks With QoS Guarantees

Shaolei Ren, Khaled Letaief, The Hong Kong University of Science and Technology

WC14-2 Ergodic Capacity Analysis of Wireless Relaying Systems In Rayleigh Fading

Golnaz Farhadi, Norman C. Beaulieu, Univ. of Alberta

WC14-3 Capacity Benefits of Relays with In-band Backhauling in Cellular Networks

Krishna Balachandran, Joseph Kang, Kemal Karakayali, Jasvinder Singh, Bell Labs, Alcatel-Lucent

WC14-4 Network Beamforming with Channel Means and Covariances at Relays

Yindi Jing, Hamid Jafarkhani, University of California, Irvine

WC14-5 On the Outage and Error Probability of Amplify-and-Forward Multi-Hop Diversity Transmission Systems

Golnaz Farhadi, Norman C. Beaulieu, Univ. of Alberta

WC14-6 Power Allocation for Regenerative Cooperative Systems with Multi-Antenna Destination

Xiaojuan Zhang, Yi Gong, Nanyang Technological University

Wed, 21 May 2008, 8:30-10:15
Room 306, BICC

WC15: UWB I

Chair: **Davide Dardari**, University of Bologna

WC15-1 Low-Complexity Transceiver Design for Asymmetric Single/Multi-Band UWB Links

Huilin Xu, Liqing Yang, Univ. of Florida

WC15-2 Multiuser UWB Communication Systems with Code-Multiplexed Transmitted Reference

Antonio Alberto D'Amico, Umberto Mengali, University of Pisa

WC15-3 A low power, reconfigurable IR-UWB system

Marian Verhelst, Katholieke Universiteit Leuven; Julien Ryckaert, Imec; Yves Vanderperren, Wim Dehaene, Katholieke Universiteit Leuven

WC15-4 A Polynomial-time Approximation Algorithm for Weighted Sum-rate Maximization in UWB Networks

Gyuhwan Kim, Qiao Li, Rohit Negi, Carnegie Mellon University

WC15-5 Parallel Signal Acquisition in Ultra-Wideband Systems with Shared Looped Delay-Line

Jyh-Horng Wen, Hsi Chou Hsu, National Chung Cheng University, Taiwan

WC15-6 Active Interference Cancellation for Systems with Antenna Selection

Yue Wang, Justin Coon, Toshiba Research Europe Ltd.

Wed, 21 May 2008, 10:45-12:30
Room 302, BICC

WC16: OFDM II

Chair: **Jun Cai**, University of Manitoba

WC16-1 Frequency-domain Interleaving for OFDM/TDM Using MMSE-FDE

Haris Gacanin, Fumiyuki Adachi, Tohoku University

WC16-2 Power allocation for OFDM transmission with DF relaying

Luc Vandendorpe, Rodolfo Torrea Duran, Jerome Louveaux, Abdellatif Zaidi, UCL

WC16-3 Two Dimensional DCT-Based Channel Estimation for OFDM Systems with Virtual Subcarriers in Mobile Wireless Channels

Bin Jiang, Wenjin Wang, Haiming Wang, Xiqi Gao, National Mobile Communication Research Lab.

WC16-4 A Low-Complexity Synchronization Design for MB-OFDM Ultra-wideband Systems

Zhenzhen Ye, Rensselare Polytechnic Institute; Chunjie Duan, Philip Orlik, Jinyun Zhang, Mitsubishi Electric Research Labs

WC16-5 Game Theoretic Model for the OFDM Water-Filling Algorithm with Imperfect Channel State Information

Hanna Bogucka, Poznan University of Technology

Wed, 21 May 2008, 10:45-12:30

Room 303, BICC

WC17: MIMO I

Chair: Daniel K. C. So, University of Manchester

WC17-1 MMSE Soft-Interference-Cancellation Aided Iterative Center-Shifting K-Best Sphere Detection for MIMO Channels

Li Wang, Lei Xu, Sheng Chen, Lajos Hanzo, University of Southampton

WC17-2 Antenna Selection for Unitary Space-Time Modulation over Correlated Rayleigh Channels

Mahdi Hajiaghayi, Chintha Tellambura, University of Alberta

WC17-3 Optimum Receive Antenna Selection for Transmit Cyclic Delay Diversity

Fan Zhang, Yangyang Zhang, Oxford University; Wasim Q. Malik, Massachusetts Institute of Technology; Ben Allen, David Edwards, Oxford University

WC17-4 Sum-of-Squares and Sum-of-Amplitudes Receiver Antenna Selection for Alamouti MIMO in Correlated Fading

Norman Beaulieu, University of Alberta; Yunfei Chen, University of Warwick

WC17-5 Large MIMO Systems: A Low-Complexity Detector at High Spectral Efficiencies

Saif Khan Mohammed, K. Vishnu Vardhan, Ananthanarayanan Chockalingam, B. Sundar Rajan, Indian Institute of Science

WC17-6 Ordered Eigenvalues of a General Class of Hermitian Random Matrices and Performance Analysis of MIMO Systems

Luis G. Ordoñez, Technical University of Catalonia; Daniel P. Palomar, Hong Kong University of Science Technology; Javier R. Fonollosa, Technical University of Catalonia

Wed, 21 May 2008, 10:45-12:30

Room 305-A, BICC

WC18: Crosslayer

Chair: Bin Li, Huawei Technologies

WC18-1 Maximal Scheduling in a Hypergraph Model for Wireless Networks

Qiao Li, Gyuhwan Kim, Rohit Negi, Carnegie Mellon University

WC18-2 Cross Layer Scheduling Algorithm for IEEE 802.16

Najah Abu Ali, Mohammad Hayajneh, United Arab Emirates University; Hossam Hassanein, Queen's University

WC18-3 QoS_GTE: A Centralized QoS Guaranteed Throughput Enhancement Scheduling Scheme for Relay-Assisted WiMAX Networks

Chung-Ju Chang, Chih-Ming Yen, National Chiao Tung University; Frank Ren, Industry Technology and Research Institute; Chia-Hsuan Chuang, National Chiao Tung University

WC18-4 Cross-layer Design for the MIMO System with Zero-forcing Receiver in the Presence of Channel Estimation Error

Feng Jiang, Ying Wang, Xi Fang, Kai Sun, Guona Hu, Ping Zhang, Beijing University of Posts and Telecommunications

WC18-5 Cross-Layer Analysis of Receiver Sense Multiple Access Protocol in Wireless Mesh Access Networks

Feiyi Huang, Yang Yang, University College London; Xiaohu Ge, Huazhong University of Science and Technology

WC18-6 Novel Batch Dependant Cross-Layer Scheduling for Multiuser OFDM Systems

Nan Zhou, Xu Zhu, Yi Huang, University of Liverpool; Hai Lin, Osaka Prefecture University

Wed, 21 May 2008, 10:45-12:30

Room 305-B, BICC

WC19: Two-way relay networks

Chair: Youjian Liu, University of Colorado at Boulder

WC19-1 Multiuser Two-Way Relaying for Interference Limited Systems

Min Chen, Aylin Yener, Penn State University

WC19-2 Distributed Space-Time Coding for Two-Way Wireless Relay Networks

Tao Cui, California Institute of Technology; FeiFei Gao, National University of Singapore; Tracey Ho, California Institute of Technology; Arumugam Nallanathan, King's College London

WC19-3 Optimal Analogue Relaying with Multi-Antennas for Physical Layer Network Coding

Ying-Chang Liang, Rui Zhang, Institute for Infocomm Research

WC19-4 Network Coding for Two-Way Relay Channels Using Lattices

Ihn-Jung Baik, Sae-Young Chung, KAIST

WC19-5 Capacity of Random Wireless Networks: Impact of Physical-Layer Network Coding

Kejie Lu, University of Puerto Rico at Mayaguez; Shengli Fu, University of North Texas; Yi Qian, National Institute of Standards and Technology

WC19-6 Two-Way Relaying over OFDM: Optimized Tone Permutation and Power Allocation

Chin Keong Ho, Rui Zhang, Ying-Chang Liang, Institute for Infocomm Research

Wed, 21 May 2008, 10:45-12:30

Room 306, BICC

WC20: UWB II

Chair: Huaping Liu, Oregon State University

WC20-1 Pilot-Channel-Assisted Log-Likelihood-Ratio Selective Combining for Low-Rate DS-UWB Communications

Xiaoli Chu, King's College London; Ross Murch, Hong Kong University of Science & Technology; Mohammad Ghavami, King's College London

WC20-2 A Myriad Filter Detector for UWB Multiuser Communication

S. Niranjayan, N. C. Beaulieu, iCORE Wireless Communications Laboratory University of Alberta, Edmonton, Alberta

WC20-3 New Receiver Designs for Generalized UWB Transmitted Reference Systems

Yunfei Chen, University of Warwick; Norman Beaulieu, University of Alberta

WC20-4 Meyer Wavelet Based Orthogonal Pulse Shaping Algorithm for UWB Communication Systems

Xuan-li Wu, Xue-jun Sha, Nai-tong Zhang, Harbin Institute of Technology

WC20-5 Multiple Access Performance of M-ary Orthogonal Balanced UWB Transmitted-Reference Systems

Dong In Kim, Sungkyunkwan University

WC20-6 Antenna selection with phase precoding for high performance UWB communication with legacy WiMedia multi-band OFDM devices

Cheran Vithanage, Steve Parker, Magnus Sandell, Toshiba Research Europe Limited

Wed, 21 May 2008, 14:00-15:45

Room 302, BICC

WC21: Space-Time Coding I

Chair: Murat Uysal, University of Waterloo

WC21-1 STBC/SFBC for 4 Transmit Antennas with 1-bit Feedback

Joonsuk Kim, Sirikiat Lek Ariyavitakul, Nambi Seshadri, Broadcom Corp

WC21-2 Maximum Likelihood Detection of Quasi-Orthogonal Space-Time Block Codes: Analysis and Simplification

Luay Azzam, Ender Ayanoglu, University of California, Irvine

WC21-3 Combined Time-Reversal Space-Time Block Coding and Transmit Beamforming for Frequency-Selective Fading Channels

Christof Jonietz, Wolfgang H. Gerstacker, University of Erlangen-Nürnberg; Robert Schober, University of British Columbia

WC21-4 A New Transmit Scheme Combining Beamforming with Space-Time Block Coding

Min Lin, Luxi Yang, Southeast University; Wei-Ping Zhu, Concordia University; Min Li, Nanjing Institute of Telecommunication Technology; Bin Li, Huawei Technologies Co. Ltd.

WC21-5 Performance Analysis of Orthogonal Space-Time Block Codes over Nakagami-q (Hoyt) Fading channels

Feng Xu, Dalian Maritime University

WC21-6 Super-Orthogonal Co-ordinate Interleaved Orthogonal Designs

David Smith, National ICT Australia

Wed, 21 May 2008, 14:00-15:45

Room 303, BICC

WC22: MIMO II

Chair: Angel Lozano, Universitat Pompeu Fabra (UPF)

WC22-1 Low Complexity Eigenmode Selection for MIMO Broadcast Systems with Block Diagonalization

Zhihua Shi, Chunming Zhao, Southeast University; Zhi Ding, University of California, Davis

WC22-2 Practical Codebook Design for Limited Feedback Spatial Multiplexing

Bruno Clerckx, YongXing Zhou, Sungjin Kim, Samsung Advanced Institute of Technology

WC22-3 A New Efficient Group-wise Spatial Multiplexing Design for Closed-Loop MIMO Systems

Sung-Hyun Moon, Heunchul Lee, Young-Tae Kim, Inkyu Lee, Korea University

WC22-4 Near-Optimal Power Allocation for MIMO Systems with Partial CSI Feedback

Xiao Li, Shi Jin, Xiqi Gao, National Mobile Communications Research Lab; Kai-Kit Wong, Adastral Park Research Campus, University College London

WC22-5 Discrete Rate Spectral Efficiency Improvement by Scheme Switching for MIMO Systems

Jinliang Huang, Svante Signell, KTH

Wed, 21 May 2008, 14:00-15:45

Room 305-A, BICC

WC23: Resource Allocation I

Chair: Sangheon Park, Korea University

WC23-1 Dynamic Frequency-Intelligent Reserve-and-Switch Technique (D-FIRST) to Combat Inter-Operator Interference

Beibei Wang, University of Maryland; Chia-Chin Chong, Fujio Watanabe, DoCoMo USA Labs; K. J. Ray Liu, University of Maryland

WC23-2 Optimal Throughput-oriented Power Control by Linear Multiplicative Fractional Programming

Li ping Qian, Ying Jun (Angela) Zhang, CUHK, Shatin, N.T., HK

WC23-3 Throughput Analysis of Frequency-Agile Medium Access Control Protocols

Alexandre de Baynast, Lili Wu, Petri Mahonen, RWTH Aachen University

WC23-4 Optimal Power and Retransmission Control Policies over Fading Channels with Packet Drop Penalty Costs

Arsalan Farrokh, Robert Schober, Vikram Krishnamurthy, University of British Columbia

WC23-5 Dynamic Bandwidth Provisioning with Fairness and Revenue Considerations for Broadband Wireless Communication

Bader Al-Manthari, Queen's University; Najah Abu Ali, UAE University; Nidal Nasser, University of Guelph; Hossam Hassanein, Queen's University

WC23-6 A Dynamic Clustering Approach in Wireless Networks with Multi-Cell Cooperative Processing

Agisilaos Papadogiannis, France Telecom; David Gesbert, Eurecom Institute; Eric Hardouin, France Telecom

Wed, 21 May 2008, 14:00-15:45

Room 305-B, BICC

WC24: Cognitive Radio III

Chair: **Zhongding Lei**, Institute for Infocomm Research

WC24-1 Low-Complexity Antenna Selection and User Scheduling in Cognitive MIMO Broadcast Systems

Karama Hamdi, Wei Zhang, Khaled Letaief, Hong Kong University of Science and Technology

WC24-2 Channel Estimation and Adaptive M-QAM in Cognitive Radio Links

Alkan Soysal, Bahcesehir University; Sennur Ulukus, University of Maryland; Charles Clancy, Laboratory for Telecommunications Sciences

WC24-3 Channel Capacity Limits of Cognitive Radio in Asymmetric Fading Environments

Himal Suraweera, Jason Gao, Victoria University; Peter Smith, University of Canterbury; Mansoor Shafi, Telecom New Zealand; Michael Faulkner, Victoria University

WC24-4 A Fair Opportunistic Spectrum Access (FOSA) Scheme in Distributed Cognitive Radio Networks

Zhiyao Ma, Zhigang Cao, Wei Chen, Tsinghua University

WC24-5 An Opportunistic Cognitive MAC Protocol for Coexistence with WLAN

Yu-Chun Cheng, Shao-Yi Hung, National Taiwan University; Eric Hsiao-Kuang Wu, National Central University; Gen-Huey Chen, National Taiwan University

Wed, 21 May 2008, 16:15-18:00

Room 302, BICC

WC25: Space-Time Coding II

Chair: **Ranjan Mallik**, Indian Institute of Technology - Delhi

WC25-1 On Symbol and Bit Error Probabilities of Orthogonal Space-Time Block Codes with Antenna Selection over Keyhole Fading Channels

Nghi Tran, Ha Nguyen, University of Saskatchewan; Tho Le-Ngoc, McGill University

WC25-2 Layered Space-Time Codes Over Ricean Fading Channels by Reducing the Correlation of Spatial Shaping Pulses

Shihai Shao, Youxi Tang, Wanzhi Ma, Kai Deng, University of Electronic Science and Technology of China

WC25-3 Numerical Performance Evaluation of impaired OFDM Links using Alamouti Space Time Coding

Marco Krondorf, Gerhard Fettweis, Vodafone Chair, TU Dresden

WC25-4 On Space-Time Trellis-Coded Offset QPSK

Xiaoyu Dang, Michael Rice, Brigham Young University

WC25-5 Multirate Space-Time-Frequency Linear Block Coding

Min Zhang, Thushara Abhayapala, The Australian National

University; Dhammika Jayalath, David Smith, National ICT Australia; Chandra Athaudage, University of Melbourne

WC25-6 Performance Analysis of Space-Time Block Codes in Nakagami-m Keyhole Channels with Arbitrary Fading Parameters

Hongzhi Zhao, Yi Gong, Yong Liang Guan, Nanyang Technological University; Shaoqian Li, University of Electronic Science and Technology of China

Wed, 21 May 2008, 16:15-18:00

Room 303, BICC

WC26: Multi-user MIMO III

Chair: **Witold Krzymien**, University of Alberta / TRLabs

WC26-1 SVD Aided Joint Transmitter and Receiver Design for the Uplink of Multiuser Detection Assisted MIMO Systems

Wei Liu, Lie-Liang Yang, Lajos Hanzo, University of Southampton

WC26-2 Scheduling and Pre-Conditioning in Multi-User MIMO TDD Systems

Jubin Jose, University of Texas at Austin; Alexei Ashikhmin, Phil Whiting, Bell Laboratories, Alcatel-Lucent Inc.; Sriram Vishwanath, University of Texas at Austin

WC26-3 MMSE Optimization with Per-Base-Station Power Constraints for Network MIMO Systems

Shuying Shi, Technical University of Berlin; Martin Schubert, Fraunhofer German-Sino Lab for Mobile Communications MCI; Holger Boche, Fraunhofer Heinrich-Hertz-Institut HHI

WC26-4 On the Convergence Property of an MMSE Based Multiuser MIMO Turbo Detector with Uplink Precoding

Juha Karjalainen, Tadashi Matsumoto, University of Oulu

WC26-5 New Beamforming Schemes with Optimum Receive Combining for Multiuser MIMO systems

Sang-Rim Lee, Seok-Hwan Park, Sung-Hyun Moon, Inkyu Lee, Korea University

WC26-6 Sum-Rate Analysis of Multiuser MIMO System with Zero-forcing Transmit Beamforming

Peng Lu, Hong-Chuan Yang, University of Victoria

Wed, 21 May 2008, 16:15-18:00

Room 305-A, BICC

WC27: Resource Allocation II

Chair: **Xinsheng Zhao**, Southeast University

WC27-1 Evolution of Base Stations in Cellular Networks: Denser Deployment versus Coordination

Yifan Liang, Andrea Goldsmith, Stanford University; Gerard Foschini, Reinaldo Valenzuela, Dmitry Chizhik, Alcatel-Lucent

WC27-2 Link Layer Priority Techniques for Real-Time Traffic in CDMA Wireless Mesh Networks

Maazen Alsabaan, Weihua Zhuang, Ping Wang, University of Waterloo

WC27-3 Resource Allocation for Multi-user Video Transmission over Multi-carrier Networks

Yi Su, Mihaela van der Schaar, Univ of California, Los Angeles

WC27-4 Constrained Resource Allocation in OFDMA Downlink Systems with partial CSIT

Felix Brah, Luc Vandendorpe, Jerome Louveaux, Université Catholique de Louvain

WC27-5 Channel-Aware Scheduling with Resource-Sharing Constraints in Wireless Networks

Mohammad Shaqfeh, Norbert Goertz, The University of Edinburgh

WC27-6 Call Admission Control in OFDM Wireless Multimedia Networks

Yan Zhang, Simula Research Laboratory

Wed, 21 May 2008, 16:15-18:00

Room 305-B, BICC

WC28: Cognitive Radio IV

Chair: **Yonghong Zeng**, Institute for Infocomm Research

WC28-1 Maximum Eigenvalue Detection: Theory and Application

Yonghong Zeng, Choo Leng Koh, Ying-Chang Liang, Institute for Infocomm Research

WC28-2 A Game Theoretic DSA-Driven MAC Framework for Cognitive Radio Networks

Chao Zou, Chunxiao Chigan, Michigan Tech

WC28-3 Cognitive Radio Game: A Framework for Efficiency, Fairness and QoS Guarantee

Alireza Attar, Mohammad Reza Nakhai, A. Hamid Aghvami, King's College London

WC28-4 Resource Modeling for a Joint Resource Management in Cognitive Radio

Vuk Marojevic, José Salazar, Xavier Revés, Antoni Gelonch, UPC

WC28-5 A Two-stage Sensing Technique for Dynamic Spectrum Access

Ling Luo, Sumit Roy, University of Washington

WC28-6 A Novel Centralized Network for Sensing Spectrum in Cognitive Radio

Hongjian Sun, Dave Laurenson, John Thompson, University of Edinburgh; Cheng-Xiang Wang, Heriot-Watt University

Thu, 22 May 2008, 8:30-10:15

Room 302, BICC

WC29: Localization & ToA Estimation

Chair: **Hai Jiang**, University of Alberta

WC29-1 High-Resolution TOA Estimation with Multi-Band OFDM UWB Signals

Huilin Xu, University of Florida; Chia-Chin Chong, Ismail Guvenc, Fujio Watanabe, DoCoMo USA Labs; Liuqing Yang, University of Florida

WC29-2 Effect of Path-Overlap on Localization Accuracy in Dense Multipath Environments

Yuan Shen, Moe Win, MIT

WC29-3 On the Performance of Linear Least-Squares Estimation in Wireless Positioning Systems

Sinan Gezici, Bilkent University; Ismail Guvenc, DoCoMo Communications Laboratories USA, Inc.; Zafer Sahinoglu, Mitsubishi Electric Research Laboratories

WC29-4 Robust Localization in Wireless Sensor Networks

Rongfei Fan, Hai Jiang, University of Alberta; Shaohua Wu,

Naitong Zhang, Harbin Institute of Technology

WC29-5 A SDP Approach for Range-free Localization in Wireless Sensor Networks

Qingjiang Shi, Chen He, Shanghai Jiao Tong University

WC29-6 A Comprehensive Evaluation of Joint Range and Angle Estimation in Ultra-Wideband Location Systems for Indoors

Camillo Gentile, A. Judson Braga, Alfred Kik, National Institute of Standards and Technology

Thu, 22 May 2008, 8:30-10:15

Room 303, BICC

WC30: Beamforming

Chair: **Keith Q. T. Zhang**, City University of HongKong

WC30-1 Empirical Comparison of MIMO and Beamforming Schemes

Cesar Hermosilla, Universidad Tecnica Federico Santa María; Reinaldo Valenzuela, Bell Labs, Alcatel-Lucent; Luciano Ahumada, Universidad Diego Portales; Rodolfo Feick, Universidad Tecnica Federico Santa Maria

WC30-2 Nonlinear Beamforming for Multiple-Antenna Assisted QPSK Wireless Systems

Sheng Chen, Lajos Hanzo, Shuang Tan, University of Southampton

WC30-3 SINR Estimation in Random Beamforming with Noisy MIMO Channel Measurements

Roland Tresch, Maxime Guillaud, ftw.Telecommunications Research Center Vienna

WC30-4 Optimal Transmit-Beam Number and Power Allocation for Correlated MIMO Rayleigh Fading Channels

Jiangyuan Li, Q. T. Zhang, City University of Hong Kong

WC30-5 Pairwise Algorithm for Distributed Transmit Beamforming

Prasanth Jeevan, UC Berkeley; Sofie Pollin, UC Berkeley / IMEC; Ahmad Bahai, Pravin Varaiya, UC Berkeley

WC30-6 A satisfaction based scheduling scheme with multi-beam zero-forcing beamforming

Tao Liu, Ling Qiu, Yupeng Liu, USTC

Thu, 22 May 2008, 8:30-10:15

Room 305-A, BICC

WC31: Sensor Networks I

Chair: **Ozgur Gurbuz**, Sabanci University

WC31-1 Partner Choice and Power Allocation for Energy Efficient Cooperation in Wireless Sensor Networks

Ljiljana Simic, Stevan Berber, The University of Auckland; Kevin Sowerby, The University of Auckland

WC31-2 Long Range Dependence of IEEE 802.15.4 Wireless Channels

Muhammad U. Ilyas, Hayder Radha, Michigan State University

WC31-3 Asynchronous Variable Hop Size Transmission with Stochastic Data Model for Sensor Networks

A K M Azad, Joarder Kamruzzaman, Monash University

WC31-4 Routing in Cooperative Wireless Networks with Mutual-Information Accumulation

Stark Draper, University of Wisconsin - Madison; Lingjia Liu, Texas A&M University, College Station; Andreas Molisch, Jonathan Yedidia, Mitsubishi Electric Research Labs

WC31-5 Performance Analysis of Sleep Scheduling Schemes in Sensor Networks Using Stochastic Petri Net

Bin Liu, Fengyuan Ren, Chuang Lin, Xin Jiang, Tsinghua University

WC31-6 Cooperation in Wireless Sensor Networks: Design and Performance Analysis of a MAC Protocol

M. Sarper Gokturk, Ozgur Gurbuz, Sabanci University

Thu, 22 May 2008, 8:30-10:15

Room 305-B, BICC

WC32: Relay Networks II

Chair: **George Karagiannidis**, Aristotle University of Thessaloniki

WC32-1 A Low-complexity Receiver for Cooperative Simultaneous Relaying

Satya Prakash Ponnaluri, Stephen G. Wilson, University of Virginia

WC32-2 Low Complexity Amplify and Forward Relaying without Channel Amplitude Estimation

Diomidis Michalopoulos, Athanasios Lioumpas, George Karagiannidis, Aristotle University of Thessaloniki

WC32-3 Amplify-and-Forward Cooperative Systems with Fixed Gain Relays

Golnaz Farhadi, Norman C. Beaulieu, Univ. of Alberta

WC32-4 Training Signal Design for Channel Estimation in Decode and Forward Relay Networks

Feifei Gao, National University of Singapore; Tao Cui, California Institute of Technology; Arumugam Nallanathan, King's College London

WC32-5 Performance Analysis of Beamforming in Two Hop Amplify and Forward Relay Networks

Raymond Louie, University of Sydney; Yonghui Li, Branka Vucetic, University of Sydney

Thu, 22 May 2008, 10:45-12:30

Room 302, BICC

WC33: FDE

Chair: **Murat Uysal**, University of Waterloo

WC33-1 Channel Equalization and Symbol Detection for Single Carrier Broadband MIMO Systems with Multiple Carrier Frequency Offsets

Chengshan Xiao, Yahong Zheng, Missouri University of Science and Technology

WC33-2 A New Symbol Block Construction for CPM with Frequency Domain Equalization

Wim Van Thillo, Jimmy Nsenga, Rudy Lauwereins, Valery Ramon, Andre Bourdoux, Francois Horlin, IMEC

WC33-3 A Spectral Efficient Relay-Based Transmit Diversity Technique for SC-FDE without Cyclic Prefix

Ui-Kun Kwon, Dae-Young Seol, Gi-Hong Im, POSTECH; Young-Doo Kim, SAIT

WC33-4 Layered Space-Frequency Equalization with Time Domain Noise Prediction for a Single-Carrier Multiple-Input Multiple-Output System

Ang Feng, Qinye Yin, Le Ding, Huiming Wang, Xi'an Jiaotong University

WC33-5 A Symbol-level FDE and Spread-Spectrum Mode Design for Multi-code Multiple Access Systems

Tingting Liu, Chenyang Yang, Beihang University

WC33-6 Performance Analysis of Frequency Domain Equalization in SC-FDMA Systems

Haiming Wang, Xiaohu You, Bin Jiang, Xiqi Gao, Southeast Univ.

Thu, 22 May 2008, 10:45-12:30

Room 303, BICC

WC34: MIMO-OFDM

Chair: **Himal Suraweera**, Victoria University

WC34-1 Feedback Reduction in Uplink MIMO OFDM Systems by Chunk Optimization

Eduard Jorswieck, Royal Institute of Technology; Aydin Sezgin, Stanford University; Bjorn Ottersten, Royal Institute of Technology; Arogyaswami Paulraj, Stanford University

WC34-2 Minimum BER Transmit Beamforming for MIMO-OFDM Systems with Finite Rate Feedback

Yang-wen Liang, Robert Schober, University of British Columbia; Wolfgang Gerstacker, University of Erlangen-Nuernberg

WC34-3 Performance Analysis of Adaptive MIMO OFDM Beamforming Systems

Krishna Kongara, Ping-Heng Kuo, Peter Smith, Lee Garth, Alan Clark, University of Canterbury

WC34-4 Turbo Joint Decoding, Synchronization and Channel Estimation for Coded MIMO-OFDM Systems

Hung Nguyen-Le, Chi Chung Ko, National University of Singapore; Tho Le-Ngoc, McGill University

WC34-5 Transmit Antenna Selection in MIMO-OFDM Systems: Bulk versus Per-tone Selection

Hongyuan Zhang, Rohit Nabar, Marvell Semiconductor Inc

WC34-6 Optimal Threshold for Channel Estimation in MIMO-OFDM System

Wang Yi, Beijing University of Posts and Telecommunication

Thu, 22 May 2008, 10:45-12:30

Room 305-A, BICC

WC35: Sensor Networks II

Chair: **Bala Natarajan**, Kansas State University

WC35-1 Joint Power Scheduling and Estimator Design for Sensor Networks Across Parallel Channels

Lauren Huie, Xiang He, Aylin Yener, Penn State University

WC35-2 Analysis of Neighbor Discovery Protocols for Energy Distribution Estimations in Wireless Sensor Networks

Shudong Fang, Stevan Berber, Akshya Swain, University of Auckland

WC35-3 A Distance based Comparison of Optimal Power Allocation to Distributed Sensors in a Wireless Sensor Network

Krithika Rajan, Balasubramaniam Natarajan, Kansas State University

WC35-4 A Framework for Collaborative Multi Class Heterogeneous Wireless Sensor Networks

A K M Azad, Joarder Kamruzzaman, Monash University

WC35-5 Mutual Information and Energy Tradeoff in Correlated Wireless Sensor Networks

Laxminarayana Pillutla, Vikram Krishnamurthy, University of British Columbia

WC35-6 Performance Analysis of Retransmission and Redundancy Schemes in Sensor Networks

Bin Liu, Fengyuan Ren, Chuang Lin, Ying Ouyang, Tsinghua University

Thu, 22 May 2008, 10:45-12:30

Room 305-B, BICC

WC36: Relay Networks III

Chair: **Kwang Bok Lee**, Seoul National University

WC36-1 OFDMA Based Two-hop Cooperative Relay Network Resources Allocation

Mohamad Khattar Awad, Xuemin (Sherman) Shen, University of Waterloo

WC36-2 Performance Analysis of Dual-Hop OFDM Relay Systems with Subcarrier Mapping

Chandra Athaudage, University of Melbourne; Masato Saito, Nara Institute of Science and Technology; Jamie Evans, University of Melbourne

WC36-3 Cooperation and Directionality: Friends or Foes?

Zhifeng Tao, Mitsubishi Electric Research Laboratories; Thanasis Korakis, Feilu Liu, Shivendra Panwar, Polytechnic University; Jinyun Zhang, Mitsubishi Electric Research Laboratories; Leandros Tassioulas, University of Thessaly

WC36-4 Power Scheduling for MIMO Relay Channels Employing Rateless Codes

Youjian Liu, Mahesh Varanasi, University of Colorado at Boulder; Xinming Huang, Worcester Polytechnic Institute

WC36-5 V-BLAST Receiver and Performance In MIMO Relay Networks with Imperfect CSI

Jiansong Chen, Xiaoli Yu, C.-C. Jay Kuo, USC

WC36-6 Design of Non-Regenerative MIMO-Relay System with Partial Channel State Information

Hui Won Je, Byongok Lee, Soojong Kim, Kwang Bok Lee, Seoul National University

Thu, 22 May 2008, 10:45-12:30

Room 306, BICC

WC37: Channel Characterization

Chair: **Fulvio Babich**, University of Trieste

WC37-1 Envelope Level Crossing Rate and Average Fade Duration in Mobile-to-mobile Fading Channels

Alenka Zajic, Gordon Stuber, Georgia Institute of Technology; Thomas Pratt, Georgia Tech Research Institute; Son Nguyen, US Army Research Laboratory

WC37-2 Level Crossing Rate and Average Fade Duration of the Multihop Rayleigh Fading Channel

Zoran Hadzi-Velkov, Nikola Zlatanov, Ss. Cyril and Methodius University; George Karagiannidis, Aristotle University of Thessaloniki

WC37-3 On the Multivariate α - μ Distribution With Arbitrary Correlation and Fading Parameters

Rausley Adriano Amaral de Souza, Inatel; Michel Daoud Yacoub, State University of Campinas

WC37-4 New Channel Model for Wireless Communications: Finite-State Phase-Type Semi-Markov Channel Model

Jinting Wang, Jun Cai, Attahiru S. Alfa, University of Manitoba

WC37-5 Modeling the dynamic effects of vegetation on radiowave propagation

Michael Cheffena, University Graduate Center - UNIK

WC37-6 Modeling of Spatially Cross-Correlated Shadow Fading in Distributed Radio Access Networks

Wei Ni, Wei Zou, Haifeng Wang, Nokia Corporation

Thu, 22 May 2008, 14:00-15:45

Room 302, BICC

WC38: Channel Coding/Decoding

Chair: **Mohamed Moustafa**, L1- Identity Solutions

WC38-1 Fountain Coding with Decoder Side Information

Dino Sejdinovic, Robert Piechocki, Angela Doufexi, University of Bristol; Mohamed Ismail, Toshiba Research Europe Ltd

WC38-2 A Comparison of Rateless Codes at Short Block Lengths

Haoming Li, University of British Columbia; Ian Marsland, Carleton University

WC38-3 Soft Decision Decoding of Reed-Solomon Codes using Sphere Decoding

Farnaz Shayegh, M. Reza Soleymani, Concordia University

WC38-4 Early-Pruned K-Best Sphere Decoding Algorithm Based on Radius Constraints

Yi-Hsuan Wu, Yu-Ting Liu, Hsiu-Chi Chang, Yen-Chin Liao, Hsie-Chia Chang, National ChiaoTung University

WC38-5 Near-Capacity Irregular Precoded Linear Dispersion Codes

Nan Wu, Lajos Hanzo, University of Southampton

WC38-6 Precoding Vector Distribution under Spatial Correlated Channel and Nonuniform Codebook Design

Hang Long, Wenbo Wang, Hui Zhao, Kan Zheng, Beijing University of Posts and Telecommunications

Thu, 22 May 2008, 14:00-15:45

Room 303, BICC

WC39: MIMO FDMA

Chair: **Lan Chen**, DoCoMo Beijing Communication Laboratories Co., Ltd

WC39-1 Real-Time Traffic Scheduling Algorithm for MIMO-OFDMA Systems

Haipeng Lei, Xin Zhang, Yafeng Wang, Beijing University of Posts and Telecommunications

WC39-2 EM-Based Receiver Design for Uplink MIMO-OFDMA Systems

Meng Wang, Graham Goodwin, Daniel Quevedo, The University of Newcastle

WC39-3 MIMO Single-Carrier FDMA with Adaptive Turbo Multiuser Detection and Co-Channel Interference Suppression

Ye Wu, Xu Zhu, Asoke Nandi, The University of Liverpool

WC39-4 Trellis-Based Receivers for SC-FDMA Transmission over MIMO ISI Channels

Wolfgang Gerstacker, Patrick Nickel, University of Erlangen-Nuremberg; Frank Obernosterer, Ingenieurbuero fuer Mobilkommunikation; Uyen Ly Dang, University of Erlangen-Nuremberg; Peter Gunreben, NXP Semiconductors; Wolfgang Koch, University of Erlangen-Nuremberg

WC39-5 An Adaptive Resource Allocation Algorithm Based on Spatial Subchannel in Multiuser MIMO/OFDM Systems

Xiaofeng Lu, Zan Li, Xidian University; Jueping Cai, Xidian University; Xiaojun Chen, Xidian University

WC39-6 Space-Time-Frequency Spreading and Coding for Multi-User MIMO-OFDM Systems

Haysam Dahman, Yousef Shayan, Xiaofang Wang, Concordia University

Thu, 22 May 2008, 14:00-15:45

Room 305-A, BICC

WC40: Wireless Networks

Chair: **Matthew McKay**, Hong Kong University of Science and Technology

WC40-1 Multiple Backhaul Mobile Access Router: Design and Experimentation

Yan Sun, Fangfei Chen, Thomas F. La Porta, The Pennsylvania State University (University Park)

WC40-2 Throughput Maximization in 802.11 Wireless Networks Employing Adaptive Antenna Arrays

Fulvio Babich, Massimiliano Comisso, University of Trieste

WC40-3 On the Use of Multiple Antennas to Reduce MAC Layer Coordination in Ad Hoc Networks

Raymond Louie, University of Sydney/CSIRO; Matthew McKay, Hong Kong University of Science Technology; Iain Collings, CSIRO

WC40-4 End-to-end Outage Probability Minimization in OFDM Based Linear Multi-Hop Networks

Xiaolu Zhang, National University of Singapore; Meixia Tao, Shanghai Jiao Tong University; Wenhua Jiao, Bell Lab Research China; Chun Sum Ng, National University of Singapore

WC40-5 Analysis of Uplink Traffic Characteristics and Impact on Performance in Mobile Data Networks

Mira Yun, Yanxia Rong, Yu Zhou, Hyeong-Ah Choi, George Washington University; Jae-Hoon Kim, SK Telecom; JungKyo Sohn, Hyeong-In Choi, Seoul National University

WC40-6 Performance Analysis of Multiuser Diversity with Capture for Wireless Networks

Justin Foo, Defeng (David) Huang, The University of Western Australia

Thu, 22 May 2008, 14:00-15:45

Room 305-B, BICC

WC41: Cooperative Communications

Chair: **Iain Collings**, CSIRO ICT Centre

WC41-1 Signal Detection in a Cooperative Communication System with Multiple CFOs by Exploiting the Properties of Space-Frequency Codes

Feng Tian, The Chinese University of Hong Kong; Xiang-Gen Xia, University of Delaware; P. C. Ching, The Chinese University of Hong Kong

WC41-2 A Cooperative Diversity Scheme With Partial Channel Knowledge at the Cooperating Nodes

Renato Machado, Bartolomeu F. Uchôa-Filho, Federal University of Santa Catarina; Tolga M. Duman, Arizona State University

WC41-3 Distributed Coded Cooperation for Relay Channels Operating in the Decode-and-Forward Mode

Mohamed Elfituri, Walaa Hamouda, Ali Ghrayeb, Concordia University

WC41-4 Exact Bit Error Probability of Cooperative Space-Time Block Coding with Amplify-and-Forward Strategy

Jun He, Pooi Yuen Kam, National University of Singapore

WC41-5 Blind cooperative diversity using Distributed Space-Time Coding in block fading channels

Kamel Tourki, Laboratoire I3S-CNRS-UNSA; Mohamed-Slim Alouini, Texas A&M; Luc Deneire, Laboratoire I3S-CNRS-UNSA

WC41-6 Impact of transmission synchronization error and cooperative reception techniques on the performance of cooperative MIMO systems

Tuan-Duc Nguyen, Olivier Berder, Olivier Sentieys, IRISA

Thu, 22 May 2008, 14:00-15:45

Room 306, BICC

WC42: Performance Analysis

Chair: **Yu Cheng**, Illinois Institute of Technology

WC42-1 Asymptotic Error Rate Analysis of Multi-Branch EGC and SC on Equally Correlated Rician Channels

Shuo Liu, University of Alberta; Julian Cheng, The University of British Columbia Okanagan; Norman C. Beaulieu, University of Alberta

WC42-2 Performance Analysis of Distributed Spatial Diversity With Selection Combining

Jeremiah Hu, Norman Beaulieu, University of Alberta

WC42-3 Distribution of Inner Product of Two Complex Gaussian Vectors and its Application to MPSK Performance

Ranjan Mallik, Indian Institute of Technology - Delhi

WC42-4 Analysis of Symbol Error Rates for Signal Space Diversity in Rayleigh Fading Channels

Jihoon Kim, Inkyu Lee, Korea University

WC42-5 Performance Bounds for MLSD Reception of OFDM Signals in Fast Fading

Jocelyn Aulin, Djordje Jeremic, Chalmers University of Technology

WC42-6 Performance Analysis for Maximal Ratio Combining of Correlated Rician Multi-path Fading Signals with Noise

Zhuwei Wang, Xubin Chen, Xin Zhang, Dacheng Yang, Beijing University of Posts and Telecommunications

Thu, 22 May 2008, 16:15-18:00

Room 302, BICC

WC43: Capacity Analysis

Chair: **Liang-Liang Xie**, University of Waterloo

WC43-1 Capacity of Spectrum-Sharing Channels with Minimum-Rate Requirements

Leila Musavian, Sonia Aissa, University of Quebec

WC43-2 A Typical Cooperative MIMO Scheme in Wireless Ad Hoc Networks and Its Channel Capacity

Haitao Zhao, Yong Xi, Jibo Wei, NUDT; Jun Li, Yiyang Branch of China Unicom

WC43-3 User Capacity of Fading Multi-User Channels with a Minimum Rate Constraint

Hengameh Keshavarz, Liang-Liang Xie, Ravi Mazumdar, University of Waterloo

WC43-4 Capacity and Mutual Information of Soft and Hard Decision Output M-ary PPM over UWB Channels

Hakan Delic, Nazli Guney, Fatih Alagoz, Bogazici University

WC43-5 Capacity Analysis and Power Allocation over Non-identical MISO Rayleigh Fading Channels

Le Cao, National University of Singapore; Meixia Tao, Shanghai Jiao Tong University; Pooi Yuen Kam, National University of Singapore

WC43-6 Discrete-Time Frequency-Selective Rayleigh Fading Channel --- Impact of Correlated Scattering on Outage and Ergodic Capacity

Christian Müller, Martin Mittelbach, Dresden University of Technology

Thu, 22 May 2008, 16:15-18:00

Room 303, BICC

WC44: Diversity

Chair: **Ranjan Mallik**, Indian Institute of Technology - Delhi

WC44-1 Switching Rates of Selection Diversity and Switch-and-Stay Diversity

Norman Beaulieu, University of Alberta

WC44-2 Predictive Feedback for Transmit Beamforming with Delayed Feedback and Channel Estimation Errors

Yao Ma, Alex Leith, Iowa State University; Robert Schober, University of British Columbia

WC44-3 Two multiuser combining receiver diversity structures

Amir Masoud Rabiei, Norman C. Beaulieu, University of Alberta

WC44-4 Pseudo-Gray Coding for Beamforming Systems

Pengcheng Zhu, Lan Tang, Yan Wang, Xiaohu You, Southeast Univ.; Jingyu Hua, Zhejiang University of Technology

WC44-5 On the Benefits of Decorrelation in Dual-Branch Diversity

Sasan Haghani, University of South Alabama; Norman Beaulieu, University of Alberta

WC44-6 Diversity Analysis of Coded SVD Schemes for MIMO Spatial Multiplexing Systems

Kyoung-Jae Lee, Inkyu Lee, Korea University

Thu, 22 May 2008, 16:15-18:00

Room 305-A, BICC

WC45: Resource Allocation III

Chair: **Yu Cheng**, Illinois Institute of Technology

WC45-1 A Collision-free MAC Scheme for Multimedia Wireless Mesh Backbone

Ping Wang, Weihua Zhuang, University of Waterloo

WC45-2 Better Wireless LAN Coverage Through Ventilation Duct Antenna Systems

Benjamin Henty, Daniel Stancil, Carnegie Mellon University

WC45-3 A Distributed Algorithm for Optimal Resource Allocation in Cognitive OFDMA Systems

Peng Cheng, Zhaoyang Zhang, Hui Huang, Peiliang Qiu, Zhejiang University

WC45-4 Radio Resource Management for the Multi-user Uplink Using DFT-precoded OFDM

Hanguang Wu, Thomas Haustein, Nokia Siemens Networks

WC45-5 Improving Capacity and Flexibility of Wireless Mesh Networks by Interface Switching

Yunxia Feng, Minglu Li, Min-You Wu, Shanghai Jiao Tong University

WC45-6 Utility Based Scheduling Algorithm for Multiple Services Per User in MIMO OFDM System

Zixiong Chen, Kai Xu, Feng Jiang, Ying Wang, Ping Zhang, Beijing University of Posts & Telecommunications

Thu, 22 May 2008, 16:15-18:00

Room 305-B, BICC

WC46: Precoding

Chair: Bin Li, Huawei Technologies

WC46-1 Optimal Precoding for Orthogonalized Spatial Multiplexing in MIMO Wireless Systems

Young-Tae Kim, Heunchul Lee, Seokhwan Park, Inkyu Lee, Korea University

WC46-2 Pre-Equalization and Precoding Design for Frequency-Selective Fading Channels

Linyang Song, Are Hjørungnes, Manav R Bhatnagar, Unik, University of Oslo

WC46-3 Limited Feedback Precoding Based on Hierarchical Codebook and Linear Receiver

Yongming Huang, Daofeng Xu, Luxi Yang, Southeast University; Yinggang Du, Bin Li, Huawei Technologies Co. Ltd.

WC46-4 Robust Precoder Design in MISO Downlink Based on Quadratic Channel Estimation

Gan Zheng, University College London; Shaodan Ma, The University of Hong Kong; Kai-Kit Wong, University College London; Tung-Sang Ng, The University of Hong Kong

WC46-5 Cooperative Precoding and Beamforming in Co-working WLANs

Wibowo Hardjawana, Branka Vucetic, Yonghui Li, The University of Sydney

WC46-6 Unitary Precoding Techniques based on Transmit-MRC for MIMO Wireless Systems

Seok-Hwan Park, Heunchul Lee, Sang-Rim Lee, Inkyu Lee, Korea University

Thu, 22 May 2008, 16:15-18:00

Room 306, BICC

WC47: CDMA

Chair: Jian Ren, Michigan State University

WC47-1 Dynamic System Analysis and Generalized Optimal Code Assignment of OVFS-CDMA Systems

Dian Gong, Yunfan Li, University of California, Riverside

WC47-2 Spectrally Efficient Spread Spectrum System Design: Message-Driven Frequency Hopping

Qi Ling, Jian Ren, Tongtong Li, Michigan State University

WC47-3 Performance of Improved Channel Allocation for Multicarrier CDMA with Adaptive Frequency Hopping and Multiuser Detection

Tao Jia, Alexandra Duel-Hallen, North Carolina State University

WC47-4 Optimized Power Control and Resource Allocation in Grouped MC-CDMA Systems

Yachen Wang, Junyang Shen, Peng Zhang, Siyang Liu,

Yuan'an Liu, Beijing University of Posts and Telecommunications

WC47-5 Repeat Accumulate Code Division Multiple Access and its Hybrid Detection

Rong Zhang, Lei Xu, Sheng Chen, Lajos Hanzo, University of Southampton

WC47-6 Optimum Power Distribution for Uplink Channel in a Cooperative Wireless CDMA Network

Bin Wang, McMaster University

Tue, 20 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

WC1p: Medium Access

WC1p-1 Opportunistic Cooperative ARQ Transmission Scheme in Cellular Networks

Dandan Wang, University of Texas at Dallas; Chia-Chin Chong, Fujio Watanabe, DoCoMo USA Labs; Hlaing Minn, Naofal Al-Dahir, University of Texas at Dallas

WC1p-2 A Probabilistic Subpacket Retransmission Scheme for ARQ Protocols

Michael Riediger, University of British Columbia; Paul Ho, Simon Fraser University

WC1p-3 ARQ in Multibeam Opportunistic Beamforming Under Outage - QoS Performance

Nizar Zorba, CTTC; Ana I. Perez-Neira, UPC

WC1p-4 MAC Performance of a 3GPP-LTE Multihop Cellular Network

Rainer Schoenen, ComNets, FB6, RWTH Aachen

WC1p-5 An Evolutionary Topology Unaware TDMA MAC Protocol for Ad Hoc Networks

Wei Li, Shan Wang, Ji-Bo Wei, National University of Defense Technology

WC1p-6 On the Stability and Delay of Channel-Aware Slotted ALOHA with Imperfect CSI

Shu-Hsien Wang, Chun-Kuang Lin, Y.-W. Peter Hong, National Tsing Hua University

WC1p-7 Link Scheduling and Power Control in Wireless Mesh Networks with Directional Antennas

Vishwanath Ramamurthi, Abu Ahmed Reaz, University of California, Davis; Sudhir Dixit, Nokia Siemens Networks;

Biswanath Mukherjee, University of California, Davis

Tue, 20 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

WC2p: Topics in MC and UWB Communications

WC2p-1 Cell Search for Cell-Based OFDM Systems Using Quasi Complete Complementary Codes

Chao-Yu Chen, Ying-Ju Min, Kuei-Ying Lu, Chi-chao Chao, National Tsing Hua University

WC2p-2 Proportionally Sampled Multicarrier Modulation

Jingxian Wu, Sonoma State University

WC2p-3 A High-Rate Low-PAPR Multicarrier Spread Spectrum System Using Cyclic Shift Orthogonal Keying

Jeng-Kuang Hwang, Yu-Lun Chiu, Yuan-Ze University

WC2p-4 An Analytical Method for Calculating the Bit Error Rate Performance of Rake Reception in UWB Multipath Fading Channels

Hua Shao, Norman Beaulieu, University of Alberta

WC2p-5 Pre-Equalization for Pre-Rake MISO DS-UWB Systems

Elham Torabi, Jan Mietzner, Robert Schober, University of British Columbia

WC2p-6 Optimized Demodulation for MAI Resilient UWB W-PAN Receivers

Tomaso Erseghe, Stefano Tomasin, University of Padova

WC2p-7 Analysis and Modeling of Near-Field Effects on the Link Budget for UWB-WPAN Channels

Zoubir Irahauten, Javier Dacuna, Gerard Janssen, Homayoun Nikookar, Alex Yarovoy, Leo Ligthart, Delft University of Technology

Wed, 21 May 2008, 8:30-10:15

Exhib. No.2 Hall, BICC

WC3p: Wireless Systems

WC3p-1 Performance of dynamic logical macro cell and parallel polling to support smooth handover to fast movers in microcellular networks

Takahiko Yamada, Phan Thanh Hoa, Ritsumeikan University

WC3p-2 Measurement and Analysis of Wireless Channel Impairments in DSRC Vehicular Communications

Ian Tan, University of California, Berkeley; Wanbin Tang, University of Electronic Science & Technology of China; Ken Laberteaux, Toyota Technical Center; Ahmad Bahai, University of California, Berkeley

WC3p-3 Spectrum Sensing for DMB-T Systems Using PN FrameHeaders

Hou-Shin Chen, Rutgers University; Wen Gao, Thomson CR; David Daut, Rutgers University

WC3p-4 An Inversion Propagation Model using GA for Coverage Prediction of a Single Urban Cell in Wireless Network

Yuhao Wang, Nanchang University; Ge Dang, China Mobile Group Guang dong Co.,Ltd.; Yang Si, Huilin Zhou, Nanchang University

WC3p-5 Calibration method enabling low-cost SDR

Björn Debaillie, Peter Van Wesemael, Jan Craninckx, IMEC

WC3p-7 A Novel Overlay Token Ring Protocol for Inter-Vehicle Communication

Kuang-Hao Liu, Jingqiu Zhang, Sherman Shen, University of Waterloo

Wed, 21 May 2008, 10:45-12:30

Exhib. No.2 Hall, BICC

WC4p: Wireless Networks I

WC4p-1 Mutual Information Metrics for Fast Link Adaptation in IEEE 802.11n

Tobias Lindstrøm Jensen, Shashi Kant, Wipro-NewLogic Technologies, Sophia-Antipolis, France and Department of Electronic Systems, Aalborg University; Joachim Wehinger, Wipro-NewLogic Technologies, Sophia-Antipolis; Bernard H. Fleury, Department of Electronic Systems, Aalborg University, Denmark and Forschungszentrum Telekommunikation Wien

WC4p-2 GORA: Goodput Optimal Rate Adaptation for 802.11 using Medium Status Estimation

Andrea Zanella, Michele Zorzi, Simone Merlin, Nicola Baldo, University of Padova; Diego Melpignano, David Siorpaes, ST-microelectronics; Federico Maguolo, University of Padova

WC4p-3 Traffic-Aware CQI Feedback in Multi-Carrier Systems with Non-Saturated Downlink Data

Xiaoxin Wu, Intel; Shuang Wang, Beijing U. of Posts and Telecom; Yuedong Xu, The Chinese U. of Hong Kong; May Wu, Intel

WC4p-4 Dynamic Spectrum Access in Cognitive Radio Wireless Networks

Yan Zhang, Simula Research Laboratory

WC4p-5 Power and Admission Control for UWB Cognitive Radio Networks

Hongyu Gu, Chenyang Yang, Beihang University

WC4p-6 Joint Connection Admission Control and Routing in IEEE 802.16-Based Mesh Networks

Shiyong Zhang, The University of British Columbia; F. Richard Yu, Carleton University; Victor C.M. Leung, The University of British Columbia

WC4p-7 Multicast Transmission over IEEE 802.11n WLAN

Christos Papathanasiou, Leandros Tassioulas, Certh-University of Thessaly

Wed, 21 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

WC5p: Wireless Networks II

WC5p-1 Outdated Link Adaptation due to Changes in the Scheduling Decisions in Interfering Cells

Mario Castaneda, Michel T. Ivrlac, Josef A. Nossek, Technische Universitaet Muenchen; Ingo Viering, Nomor Research GmbH; Axel Klein, Nokia Siemens Networks

WC5p-2 Bandwidth and Price Competitions of Wireless Service Providers in Two-stage Spectrum Market

Juncheng Jia, Qian Zhang, HKUST

WC5p-4 An On-off Queue Control Mechanism for Scalable Video Streaming over the IEEE 802.11e WLAN

Yu Zhang, Chuan Heng Foh, Jianfei Cai, Nanyang Technological University

WC5p-5 Fine synchronization for wireless sensor networks using gossip averaging algorithms

Nicolas Maréchal, Jean-Benoit Pierrot, CEA-LETI MINATEC; Jean-Marie Gorce, CITI - INSA Lyon

WC5p-6 Control Systems Designed for Wireless Sensor and Actuator Networks

Xianghui Cao, Jiming Chen, Zhejiang University; Yang Xiao, University of Alabama; Youxian Sun, Zhejiang University
WC5p-7 Performance of Fast AMC in E-UTRAN Uplink
Claudio Rosa, Nokia Siemens Networks R&D; Dimas Lopez Villa, Carlos úbeda Castellanos, Francesco D. Calabrese, Aalborg University; Per-Henrik Michaelsen, Klaus I. Pedersen, Peter Skov, Nokia Siemens Networks R&D

Wed, 21 May 2008, 16:15-18:00
Exhib. No.2 Hall, BICC

WC6p: Cooperation & Relaying

WC6p-1 Performance Analysis of Coded Cooperation with Hierarchical Modulation

Kan Zheng, Ling Wang, Wenbo Wang, Beijing Univ of Posts &Telecomms

WC6p-2 Comparison of Schemes for Joint Subcarrier Matching and Power Allocation in OFDM Decode-and-Forward Relay System

Wenyi Wang, Shuyuan Yang, Li Gao, Institute of Acoustics, Chinese Academy of Science

WC6p-3 An Interleaver-based Asynchronous Cooperative Diversity Scheme for Wireless Relay Networks

Zhaoxi Fang, Liangbin Li, Zongxin Wang, Fudan University

WC6p-4 Impact of Limited Feedback on Multiple Relay Zero-Forcing Precoding Systems

Erlin Zeng, Shihua Zhu, Xi'an Jiaotong University; Ming Xu, Panasonic R&D Center China Co., Ltd.

WC6p-5 Relay selection in dual-hop transmission systems: selection strategies and performance results

Andreas Mueller, Joachim Speidel, University of Stuttgart

WC6p-6 Differential Modulation and Selective Combining for Multiple-Relay Networks

Li Chu, Jinhong Yuan, The University of New South Wales; Yonghui Li, The University of Sydney; Zhuo Chen, CSIRO ICT Centre

WC6p-7 Cooperative Broadcast with Randomized Parity Forwarding

Sang Wu Kim, Iowa State University

Thu, 22 May 2008, 8:30-10:15
Exhib. No.2 Hall, BICC

WC7p: Topics in Wireless Communications

WC7p-1 The Optimal BER Linear Rake Receiver for Alpha-Stable Noise

S. Niranjayan, N. C. Beaulieu, University of Alberta

WC7p-2 Iterative Mercury/waterfilling for Parallel Multiple Access Channels

Gaoning He, Sophie Gault, Motorola Labs; Merouane Debbah, SUPELEC; Eitan Altman, INRIA

WC7p-3 Semi-Blind Cancellation of IQ-Imbalances

Matthias Hesse, CNRS; Marko Mail, Hans-Joachim Jentschel, TU Dresden; Luc Deneire, UNSA; Jerome Lebrun, CNRS

WC7p-4 Best Node Selection Through Distributed Fast Variable Power Multiple Access

Raymond Yim, Mitsubishi Electric Research Labs; Neelesh Mehta, Indian Institute of Science; Andreas Molisch, Mitsubishi Electric Research Labs

WC7p-5 HSUPA Scheduling Algorithms Utilizing RoT Measurements and Interference Cancellations

Danlu Zhang, Sharad Sambhwani, Bibhu Mohanty, Qualcomm Inc.

Thu, 22 May 2008, 10:45-12:30
Exhib. No.2 Hall, BICC

WC8p: CDMA

WC8p-1 Effect of Carrier Frequency Offset on the BER Performance of Variable Spreading Factor OFCDM Systems

Lamiaa Khalid, Alagan Anpalagan, Ryerson University

WC8p-2 On WCDMA Downlink Capacity with Power Allocation Strategy and Adaptive Antenna Arrays

Elias Yaacoub, Zaher Dawy, American University of Beirut

WC8p-3 Full Diversity Spreading Code for Downlink Space-Time-Frequency Spreading CDMA

Siyang Liu, Feifei Wang, Ranran Zhang, Yachen Wang, Yuanan Liu, Beijing University of Posts and Telecommunications

WC8p-4 Cluster-based blind estimation of Mary DSSS signals

Hang Wang, Jingbo Guo, Zanzi Wang, Tsinghua University

WC8p-5 Serial Search Based Code Acquisition in the Cooperative MIMO Aided DS-CDMA Downlink

Seung Hwan Won, Kyungchun Lee, Lajos Hanzo, University of Southampton

WC8p-6 Spreading Code Allocation for Downlink MC-CDMA

Shyue-Win Wei, Yu-Chieh Cheng, Chin-Kuo Jao, National Chi Nan Univ

WC8p-7 PAPR Reduction for MC-CDMA system based on ICSA and Hopfield Neural Network

Aihua Wang, Jianping An, Zhongxia He, Beijing Institute of Technology

Thu, 22 May 2008, 14:00-15:45
Exhib. No.2 Hall, BICC

WC9p: Channel Estimation & Equalization

WC9p-1 Channel Estimation for OFDM systems in the Presence of Carrier Frequency Offset and Phase Noise

Jun Tao, University of Missouri-Columbia; Jingxian Wu, Sonoma State University; Chengshan Xiao, Missouri University of Science and Technology

WC9p-2 Timing Acquisition for Multi-User IDMA

Bathiya Senanayake, The Australian National University; Mark Reed, Zhenning Shi, National ICT Australia

WC9p-3 Soft Input Turbo Frequency-Domain Channel Estimation for Single-Carrier Multiuser Detection

Ye Wu, Xu Zhu, Asoke Nandi, The University of Liverpool

WC9p-4 Time-Slotted Round-Trip Carrier Synchronization in Large-Scale Wireless Networks

Qian Wang, Kui Ren, Illinois Institute of Technology

WC9p-5 Noniterative Joint Channel Equalization and Decoding Based on State Extended Viterbi Algorithm

Iraj Hosseini, University of Alberta; Kaveh Mahdaviani, Omid Taheri, Isfahan University of Technology; Norman C. Beaulieu, University of Alberta

WC9p-6 Decision-Directed Tracking of Doubly-Selective Channels Using Exponential Basis Models

Shuangchi He, Jitendra Tugnait, Auburn University

Thu, 22 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

WC10p: MIMO

WC10p-1 Analytical SER Performance Bound of M-QAM MIMO System with ZF-SIC Receiver

Jin Xu, Xiaofeng Tao, Ping Zhang, Beijing University of Posts and Telecommunications (BUPT)

WC10p-2 Improved Frequency-Domain Channel Estimation for Fast Time-Varying MIMO-SCFDE Channels

Yahong Zheng, Jian Zhang, Missouri University of Science and Technology

WC10p-3 BER-Minimized Space-Time-Frequency Codes for MIMO Highly Frequency-Selective Block-Fading Channels

Wei-Cheng Liu, Li-Chun Wang, National Chiao Tung University

WC10p-4 Novel Hybrid-ARQ Chase Combining Algorithms for ZF-SIC V-BLAST

He Wang, Yongyu Chang, Beijing University of Posts and Telecommunications

WC10p-5 A Resource Allocation with Balanced Data Throughput and Power Consumption under QoS Constraint in MIMO Interference Systems: A Noncooperative Game Approach

Hojoong Kwon, Byeong Gi Lee, Seoul National University

WC10p-6 Beamforming with hybrid channel information in spatially correlated MISO channels

Jae-Yun Ko, Yong-Hwan Lee, Seoul National University

WC10p-7 On the Analysis and Design of Practical Quantization for Opportunistic Beamforming

Alexis A. Dowhuszko, Graciela Corral-Briones, National University of Cordoba; Jyri Hämäläinen, University of Oulu; Risto Wichman, Helsinki University of Technology

WC10p-8 Flexible Orthogonal Code for CDMA Based MIMO-OFDM Systems with Space-Time-Frequency Spreading

Yachen Wang, Peng Zhang, Junyang Shen, Siyang Liu, Yuanan Liu, Beijing University of Posts and Telecommunications

**Wireless Networking
Symposium**

Tue, 20 May 2008, 14:00-15:45

Room 311-A, BICC

WN01: Wireless Sensor Networks I

Chair: **Wenye Wang**, NC State University

WN01-1 A Novel Location-Free Greedy Forward Algorithm for Wireless Sensor Networks

Azzedine Boukerche, Horacio Oliveira, University of Ottawa; Eduardo Nakamura, Antonio Loureiro, Federal University of Minas Gerais

WN01-2 3D-DCT Data Aggregation Technique for Regularly Deployed Wireless Sensor Networks

Fan Bai, Abbas Jamalipour, University of Sydney

WN01-3 Optimality of Myopic Sensing in Multi-Channel Opportunistic Access

Tara Javidi, Univ of California, San Diego; Bhaskar Krishnamachari, University of Southern California; Qing Zhao, University of California, Davis; Mingyan Liu, University of Michigan

WN01-4 Placement of multiple mobile data collectors in underwater acoustic sensor networks

Waleed Alsalih, Selim Akl, Hossam Hassanein, Queen's University

WN01-5 Proactive Power Optimization of Sensor Networks

Rahul Khanna, Intel Corporation; Huaping Liu, Oregon State University; Hsiao-Hwa Chen, National Cheng Kung University

WN01-6 Performance Limits of Time Synchronization in Wireless Sensor Networks

Stefano Severi, Davide Dardari, University of Bologna

Tue, 20 May 2008, 14:00-15:45

Room 311-B, BICC

WN02: Wireless Ad hoc Networks I

Chair: **Liang-Liang Xie**, University of Waterloo

WN02-1 Modeling and Managing the Trust for Wireless and Mobile Ad hoc Networks

Yonglin Ren, Azzedine Boukerche, University of Ottawa

WN02-2 Expressive Analytical Model for Routing Protocols in Mobile Ad Hoc Networks

Taesoo Jun, Angela Dalton, Shreeshankar Bodas, Christine Julien, Sriram Vishwanath, The University of Texas at Austin

WN02-3 Invariance Property of Isotropic Random Walk Mobility Patterns in Mobile Ad-Hoc Networks

Han Cai, Chul-Ho Lee, Do Young Eun, North Carolina State University

WN02-4 The Throughput Order of Ad Hoc Networks with Physical-layer Network Coding and Analog Network Coding

Chen Chen, Haige Xiang, Peking University

WN02-5 Network Coding Based Cooperative Peer-to-Peer Repair in Wireless Ad-Hoc Networks

Xin Liu, Saqib Raza, Chen-Nee Chuah, University of California, Davis; Gene Cheung, Hewlett-Packard Laboratories

WN02-6 Throughput Optimization for Hierarchical Cooperation in Ad Hoc Networks

Javad Ghaderi, Liang-Liang Xie, Xuemin Shen, University of Waterloo

Tue, 20 May 2008, 14:00-15:45

Room 311-C, BICC

WN03: Mobility and Handoff

Chair: **Vincent Wong**, University of British Columbia

WN03-1 Network Selection for Group Handover in Multi-access Networks

Xuejun Cai, Nokia Siemens Networks; Fang Liu, Alcatel-Lucent

WN03-2 A Constrained MDP-based Vertical Handoff

Decision Algorithm for 4G Wireless Networks

Chi Sun, Enrique Stevens-Navarro, Vincent Wong, University of British Columbia

WN03-3 Smart Predictive Trigger for Effective Handover in Wireless Networks

Su Fong Chien, BT Multimedia (Malaysia) Sdn Bhd; Huaiyu Liu, Intel Corporate Technology Group; Andy L. Y. Low, BT Multimedia (Malaysia) Sdn Bhd; Christian Maciocco, Intel Corporate Technology Group; L.Y. Ho, Multimedia University

WN03-4 Fixed/Variable Power Multicast Over Heterogeneous Fading Channels in Cellular Networks

Qinghe Du, Xi Zhang, Texas A&M University

WN03-5 Solving the Incertitude of Vertical Handovers in Heterogeneous Mobile Wireless Network Using MDP

Jing Wang, R. Venkatesha Prasad, Ignas Niemegeers, Delft University of Technology

WN03-6 Infrastructure Sharing and Shared Operations for Mobile Network Operators From a Deployment and Operations View

Thomas Frisanco, Paul Tafertshofer, Pierre Lurin, Nokia Siemens Networks; Rachel Ang, Ernst & Young

Tue, 20 May 2008, 16:15-18:00

Room 311-A, BICC

WN04: Wireless Sensor Networks II

Chair: **Xiuzhen Cheng**, George Washington Univ

WN04-1 A Line-Based Data Dissemination protocol for Wireless Sensor Networks with Mobile Sink

Elyes Ben Hamida, Guillaume Chelius, INSA Lyon

WN04-2 Self-Orienting Wireless Multimedia Sensor Networks for Maximizing Multimedia Coverage

Nurcan Tezcan, Wenye Wang, North Carolina State University

WN04-3 Distortion Analysis for Real-Time Data Collection of Correlated Fields in Randomly Distributed Sensor Networks

Xiaobo Zhang, Heping Wang, Ashfaq Khokhar, Rashid Ansari, Guoguang Chen, Univ. of Illinois at Chicago

WN04-4 Joint Clustering and Optimal Cooperative Routing in Wireless Sensor Networks

Weiyang Ge, Junshan Zhang, Guoliang Xue, Arizona State University

WN04-5 Path coverage property of randomly deployed sensor networks with finite communication ranges

Junko Harada, Shigeo Shioda, Chiba University; Hiroshi Saito, NTT

WN04-6 UWB Radar Sensor Networks for Sense-through-Foliage Target Detection

Qilian Liang, University of Texas at Arlington; Sherwood Samn, Air Force Research Lab/RHX; Xiuzhen Cheng, George Washington University

Tue, 20 May 2008, 16:15-18:00

Room 311-B, BICC

WN05: Wireless Ad hoc Networks II

Chair: **Tommaso Pecorella**, University of Florence Research Unit

WN05-1 Relative Fairness and Optimized Throughput for Mobile Ad hoc Networks

Abderrahim Benslimane, Abderrezak Rachedi, Université d'Avignon

WN05-2 Distributed Opportunistic Scheduling in Multihop Wireless Ad Hoc Networks

Yijiang Sun, Victor Li, Ka-Cheong Leung, The University of Hong Kong

WN05-3 Broadcast Throughput Capacity of Wireless Ad Hoc Networks with Multipacket Reception

Zheng Wang, Hamid Sadjadpour, University of California, Santa Cruz; Jose Joaquin Garcia-Luna-Aceves, University of California, Santa Cruz and Palo Alto Research Center (PARC)

WN05-4 A Utility-Based Incentive Scheme for P2P File Sharing in Mobile Ad Hoc Networks

Afzal Mawji, Hossam Hassanein, Queen's University

WN05-5 Scaling Laws for Distance Limited Communications in Vehicular Ad Hoc Networks

Hossein Pishro-Nik, Mohammad Nekoui, Ali Eslami, UMASS-Amherst

WN05-6 Probabilistic Prediction of Available Bandwidth in Multi-Hop Ad-Hoc Networks

Stefan Penz, Alexander Achterfeld, RWTH Aachen University

Tue, 20 May 2008, 16:15-18:00

Room 311-C, BICC

WN06: Cross-layer design in wireless networks

Chair: **Ping Wang**, University of Waterloo

WN06-1 Optimal Power Control over Fading Channel with Cross-layer Performance Constraint

Xiaofeng Bai, Abdallah Shami, Serguei Primak, The University of Western Ontario

WN06-2 Distributed Cross Layer Congestion Control for Real-Time Video over WLAN

Chih-Wei Huang, University of Washington; Michael Loiacono, Justinian Rosca, Siemens; Jenq-Neng Hwang, University of Washington

WN06-3 Cross-layer Enhanced Mobility Management in Heterogeneous Networks

Markus Luoto, Tiia Sutinen, VTT Technical Research Centre of Finland

WN06-4 Routing over Interconnected Heterogeneous Wireless Networks with Intermittent Connections

Hany Samuel, Weihua Zhuang, University of Waterloo; Bruno Preiss, Research In Motion Limited

WN06-5 PDSMA: Pseudo-Deterministic Statistical Multiple Access for Voice Packets Uplink Scheduling

Marwen Abdennebil, Samir Tohme, University of Versailles

WN06-6 Deploying Multiple Mobile Sinks in Event-Driven WSNs

Bin Wang, Dongliang Xie, Beijing University of Posts and Telecommunications; Canfeng Chen, Jian Ma, Nokia Research Center, Beijing; Shiduan Cheng, Beijing University of Posts and Telecommunications

Wed, 21 May 2008, 8:30-10:15

Room 311-A, BICC

WN07: Wireless Sensor Networks III

Chair: **Baochun Li**, University of Toronto

WN07-1 Geometric Random Linear Codes in Sensor Networks

Yunfeng Lin, Ben Liang, Baochun Li, University of Toronto

WN07-2 On the Devolution of Large-scale Sensor Networks in the Presence of Random Failures

Fei Xing, Wenye Wang, North Carolina State University

WN07-3 Using Soft-line Recursive Response to Improve Query Aggregation in Wireless Sensor Networks

Xiaoming Lu, Matt Spear, Karl Levitt, Norman S. Matloff, S. Felix Wu, UC Davis

WN07-4 Performance Analysis of an Opportunistic Transmission Scheme for Wireless Sensor Networks

Ca Phan, Thuy-Dan Nguyen, Kyung Hee University; Euijck Kim, Hyohyun Choi, Samsung Electronics Co.; Jeong Kim, Kyung Hee University

WN07-5 Energy-Efficient Data Dissemination Protocol for Detouring Routing Holes in Wireless Sensor Networks

Ye Tian, Fucai Yu, Younghwan Choi, Soochang Park, Euisin Lee, Minsook Jin, Sang-Ha Kim, Chungnam National University

WN07-6 A Greedy Distributed Time Synchronization Algorithm for Wireless Sensor Networks

King-Yip Cheng, King-Shan Lui, Yik-Chung Wu, Vincent Tam, The University of Hong Kong

Wed, 21 May 2008, 8:30-10:15

Room 311-B, BICC

WN08: Wireless Ad hoc Networks III

Chair: **Xiaowen Chu**, Hong Kong Baptist University

WN08-1 Minimizing Interferences in Wireless Ad Hoc Networks through Topology Control

Guinian Feng, Tsinghua University; Soung Chang Liew,

Chinese University of Hong Kong; Pingyi Fan, Tsinghua University

WN08-2 Analytical Evaluation on the Performance of Ad Hoc Networks When Using Beamforming Techniques

Khalil Fakih, Jean-Francois Diouris, Guillaume Andrieux, Ecole polytechnique de l'université de Nantes & IREENA

WN08-3 Quadratic Residue Based Address Allocation for Mobile Ad Hoc Networks

Xiaowen Chu, Hong Kong Baptist University; Yi Sun, Simon Fraser University; Ke Xu, Tsinghua University; Zeeshan Saker, Jiangchuan Liu, Simon Fraser University

WN08-4 Saturation Throughput Analysis of a Passive Cluster-Based Medium Access Control Protocol for Ad Hoc Wireless Networks

Jesús Alonso-Zárate, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC); Elli Kartsakli, Alex Cateura, Universitat Politècnica de Catalunya (EPSC-UPC); Christos Verikoukis, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC); Luis Alonso, Universitat Politècnica de Catalunya (EPSC-UPC)

WN08-5 Differentiated Reliable Routing in Hybrid Vehicular Ad-Hoc Networks

Rongxi He, Dalian Maritime University; Humphrey Rutagemwa, Xuemin (Sherman) Shen, University of Waterloo

WN08-6 Selective Anchor Placement Algorithm for Ad-hoc Wireless Sensor Networks

Xiaoli Li, Hongchi Shi, Yi Shang, University of Missouri-Columbia

Wed, 21 May 2008, 8:30-10:15

Room 311-C, BICC

WN09: Cognitive Radio Networks

Chair: **Danny Tsang**, Hong Kong University of Science and Technology

WN09-1 Generalized Access for MIMO Cognitive Radios

Enzo Baccarelli, Mauro Biagi, Cristian Pelizzoni, Nicola Cordeschi, University of Rome "La Sapienza"

WN09-2 A Clustered On-demand Multi-Channel MAC Protocol for Wireless Multimedia Sensor Networks

Cheng Li, Pu Wang, Memorial University of Newfoundland; Hsiao-Hwa Chen, National Cheng Kung University; Mohsen Guizani, Western Michigan University

WN09-3 Impact of Channel Heterogeneity on Spectrum Sharing in Cognitive Radio Networks

Miao Ma, Danny H. K. Tsang, The Hong Kong University of Science and Technology

WN09-4 Vegas-W: An Enhanced TCP-Vegas for Wireless Ad Hoc Networks

Lianghui Ding, Xinbing Wang, Youyun Xu, Wenjun Zhang, Wen Chen, Shanghai Jiaotong University

WN09-5 Natural Network Coding in Multi-hop Wireless Networks

Wei Pu, University of Science Technology of China; Chong Luo, Microsoft Research Asia; Binxing Jiao, University of Science Technology of China; Feng Wu, Microsoft Research Asia

WN09-6 A Lexicographically Optimal Load Balanced Routing Scheme for Wireless Mesh Networks
Ranjan Pa, Indian Institute of Management

Wed, 21 May 2008, 10:45-12:30

Room 311-A, BICC

WN10: Wireless Sensor Networks IV

Chair: Marina Aguado Castrillo, Bilbo University

WN10-1 Localization via TDOA in a UWB sensor network using Neural Networks

Salih Ergüt, Ramesh R. Rao, University of California, San Diego; Özgür Dural, Qualcomm, Inc.; Zafer Sahinoglu, Mitsubishi Electric Research Labs

WN10-2 Energy Conservation in Reliable Wireless Sensor Networks

Fatma Bouabdallah, Nizar Bouabdallah, INRIA; Raouf Boutaba, University of Waterloo

WN10-3 An Index-Based Sensor-Grouping Mechanism for Efficient Field-Coverage Wireless Sensor Networks

Yangfan Zhou, Michael Lyu, The Chinese University of Hong Kong; Jiangchuan Liu, Simon Fraser University

WN10-4 RBS: A Reliable Broadcast Service for Large-Scale Low Duty-Cycled Wireless Sensor Networks

Feng Wang, Jiangchuan Liu, Simon Fraser University

WN10-5 Enabling QoS Multipath Routing Protocol for Wireless Sensor Networks

Yunfeng Chen, Nidal Nasser, University of Guelph

WN10-6 Underwater Acoustic Sensor Networking Using Passive Phase Conjugation

Muhammad Farukh Munir, Institut Eurécom; Hong Xu, UNice, Lab I3S; Fethi Filali, Institut Eurécom

Wed, 21 May 2008, 10:45-12:30

Room 311-B, BICC

WN11: Wireless Ad hoc Networks IV

Chair: Xiaowen Chu, Hong Kong Baptist University

WN11-1 Multi-Initiator Connected Dominating Set Construction for Mobile Ad Hoc Networks

Kyoung Min Kim, Min-Te Sun, Fangyang Shen, Auburn University; Hiromi Okada, Kazuya Sakai, Kansai University

WN11-2 Heavy-tailed Workload Aware Ad Hoc Routing

Jason (Hongjun) Li, Song Luo, Wei Tang, Renato Levy, Intelligent Automation, Inc.; Kihong Park, Purdue University

WN11-3 Efficient Flooding Scheme Based on 2-Hop Backward Information in Ad Hoc Networks

Trong Duc Le, Hyunseung Choo, Sungkyunkwan University

WN11-4 Multi-channel Multi-interface MAC Protocol in Wireless Ad Hoc Networks

Eunsook Shim, Kyungpook National University; Jounghik Kim, ETRI; Seunghoon Baek, Dongkyun Kim, Kyungpook National University

WN11-5 Hop-by-Hop Frame Aggregation for VoIP on Multi-Hop Wireless Networks

Kyungsoo Lee, Sangki Yun, Korea University; Inhye Kang, University of Seoul; Hyogon Kim, Korea University

WN11-6 On Estimating the Topology of an Adversarial Wireless Network

Andrew Eckford, Scott Hadley, York University

Wed, 21 May 2008, 10:45-12:30

Room 311-C, BICC

WN12: Modeling and Analysis of IEEE 802.11-Based WLANs I

Chair: Daniele Tarchi, HKUST

WN12-1 APOS: Adaptive Parameters Optimization Scheme for Voice over IEEE 802.11g

Nicola Baldo, Federico Maguolo, Simone Merlin, Andrea Zanella, Michele Zorzi, University of Padova; Diego Melpignano, David Siorpaes, ST-microelectronics

WN12-2 Weighted Fair Uplink/Downlink Access Provisioning in IEEE 802.11e WLANs

Feyza Keceli, Inanc Inan, Ender Ayanoglu, University of California, Irvine

WN12-3 Vertical handover criteria and algorithm in IEEE802.11 and 802.16 hybrid networks

Roberta Fracchia, Zuoran Dai, Motorola; Jeremy Gosteau, Sequans Communications; Pietro Pellati, Guillaume Vivier, Motorola

WN12-4 A Performance Study of Mobile Handoff Delay in IEEE 802.11-Based Wireless Mesh Networks

Akshay Mangalam Srivatsa, Jiang Xie, University of North Carolina at Charlotte

WN12-5 Adaptive Design for the Packet Length of IEEE 802.11n Networks

Feng Zheng, University of Hannover; John Nelson, University of Limerick

WN12-6 Achieving Temporal Fairness in Multi-Rate 802.11 WLANs with Capture Effect

Lin Luo, Marco Gruteser, Rutgers University; Hang Liu, Thomson Inc

Wed, 21 May 2008, 14:00-15:45

Room 311-A, BICC

WN13: Resource Management in WLANs I

Chair: Jianwei Huang, The Chinese University of Hong Kong

WN13-1 Dynamic Resource Allocation of Delay Sensitive Users Using Interactive Learning over Multi-carrier Networks

Hsien-Po Shiang, Wenchi Tu, Mihaela Van der Schar, UCLA

WN13-2 An Asynchronous Distributed Dynamic Channel Assignment Scheme for Dense WLANs

Micheal Drieberg, Victoria University; Fu-Chun Zheng, University of Reading; Rizwan Ahmad, Victoria University; Sverrir Olafsson, BT Group

WN13-3 Downlink OFDM Scheduling and Resource Allocation for Delay Constraint SVC Streaming

Xin Ji, Katholieke Universiteit Leuven; Jianwei Huang, The Chinese University of Hong Kong; Mung Chiang, Princeton University; Francky Catthoor, Interuniversity Micro-Electronics Center

WN13-4 Reliable Wireless Multicasting with Minimum Overheads in OFDM-based WLANs

Byung-Seo Kim, Sung Won Kim, Farruh Ishmanov, Hongik University, Yeungnam University

WN13-5 A Dynamic Resource Allocation Scheme for Guaranteed Bit Rate Services in OFDMA Networks

Chrysostomos Koutsimanis, Gabor Fodor, Ericsson Research

WN13-6 Dual Queue Management for Improving TCP Performance in Multi-rate Infrastructure WLANs

Qiuyan Xia, Xing Jin, Mounir Hamdi, HKUST

Wed, 21 May 2008, 14:00-15:45

Room 311-B, BICC

WN14: Modeling and Analysis of IEEE 802.11-Based WLANs II

Chair: Chonggang Wang, University of Arkansas

WN14-1 An Analytical Model for IEEE 802.11 Point-to-Point Link

Yong Yan, Hong Kong Baptist University, Hong Kong; Xiaowen Chu, Hong Kong Baptist University, Hong Kong

WN14-2 PigWin: Meaningful Load Estimation in IEEE 802.11 Based Wireless LANs

Aditya Dhananjay, Lu Ruan, Iowa State University

WN14-3 Performance Analysis of IEEE 802.11 Wireless Mesh Networks

Ye Yan, Hua Cai, Seung-Woo Seo, Seoul National University

WN14-4 Supporting Service Differentiation and Maximizing System Saturation Throughput: A Contradictory in IEEE 802.11e WLAN

Yun Li, Chongqing University of Posts & Telecommunications, ; Chonggang Wang, University of Arkansas; Qianbin Chen, Chongqing University of Posts & Telecommunications; Keping Long, University of Electronic Science and Technology of China

WN14-5 Contention Window and Transmission Opportunity Adaptation for Dense IEEE 802.11 WLAN Based on Loss Differentiation

Hui Ma, Sumit Roy, University of Washington

WN14-6 Finite Load Analysis of IEEE 802.11 Distributed Coordination Function

Kaveh Ghaboosi, Matti Latva-aho, University of Oulu; Yang Xiao, University of Alabama

Wed, 21 May 2008, 14:00-15:45

Room 311-C, BICC

WN15: IEEE 802.16/WiMAX Networks I

Chair: Junshan Zhang, Arizona State University

WN15-1 Cooperative Multicast Scheduling Scheme for IPTV Service over IEEE 802.16 Networks

Fen Hou, Lin X. Cai, James She, Pin-Han Ho, Xuemin

(Sherman) Shen, University of Waterloo; Junshan Zhang, Arizona State University

WN15-2 A Dynamic Bandwidth Reservation Scheme for Hybrid IEEE 802.16 Wireless Networks

Jianhua He, Swansea University; Kun Yang, Ken Guild, University of Essex

WN15-3 Adaptive Random Network Coding in WiMAX

Jin Jin, Baochun Li, University of Toronto

WN15-4 Measuring Packet-level Memory Length of IEEE 802.15.4 Wireless Channels with Relative Mutual Information

Muhammad U. Ilyas, Hayder Radha, Michigan State University

WN15-5 A Clustering Approach to Planning Base Station and Relay Station Locations in IEEE 802.16j Multi-hop Relay Networks

Yang Yu, Seán Murphy, Liam Murphy, University College Dublin

WN15-6 A game-theoretic model for radio resource management in a cooperative WiMAX/HSDPA network

Sana Horrich, Salah Eddine Elayboui, Sana Ben Jemaa, Orange Labs

Wed, 21 May 2008, 16:15-18:00

Room 311-A, BICC

WN16: Resource Management in WLANs II

Chair: Wei Chen, Tsinghua University

WN16-1 Sidewalk: a RFID Tag Anti-Collision Algorithm Exploiting Sequential Arrangements of Tags

Hyunho Koh, Sangki Yun, Hyogon Kim, Korea University

WN16-2 Power Allocation and Subcarrier Pairing in OFDM-Based Relaying Networks

Yong Li, Wenbo Wang, Jia Kong, Wei Hong, Xing Zhang, Mugen Peng, Beijing University of Posts and Telecommunications

WN16-3 Dynamic Power and Sub-carrier Allocation for OFDMA-based Wireless Multicast Systems

Juan Liu, Wei Chen, Zhigang Cao, Tsinghua University; Khaled Ben Letaief, Hong Kong University of Science and Technology

WN16-4 Utility-optimal Cross-layer Design for WLAN with MIMO Channels

Yuxia Lin, Vincent Wong, University of British Columbia

WN16-5 Flexible Code Allocation to Improve System Utilization Using Nonblocking OVSF Codes in WCDMA

Hasan Cam, Narasimha Challa, Arizona State University

WN16-6 Simulated Annealing-Based Advanced Spectrum Management Methodology for WCDMA Systems

Jad Nasreddine, Jordi Pérez-Romero, Oriol Sallent, Ramon Agustí, Universitat Politècnica de Catalunya

Wed, 21 May 2008, 16:15-18:00

Room 311-B, BICC

WN17: Modeling and Analysis of IEEE 802.11-Based WLANs III

Chair: Yu Wang, University of North Carolina at Charlotte

WN17-1 A Dynamic IEEE 802.11e TXOP Scheme in WLANs under Self-Similar Traffic: Performance Enhancement and Analysis

Geyong Min, Jia Hu, Mike E. Woodward, University of Bradford

WN17-2 Achieving Fair TCP Access in the IEEE 802.11 Infrastructure Basic Service Set

Feyza Keceli, Inanc Inan, Ender Ayanoglu, University of California, Irvine

WN17-3 A Unified Model for Performance Analysis of 802.11 in Heterogeneous Traffic and Saturation Condition

Mingxin Chen, Gan Liu, Di Wu, Guangxi Zhu, Huazhong University of Science and Technology

WN17-4 Stretch Factor of Curveball Routing in Wireless Network: Cost of Load Balancing

Fan Li, Yu Wang, University of North Carolina at Charlotte

WN17-5 Spatial Reuse for Practical Scenarios: Iterative Power Adjustment from Distributed Contour Estimation and Propagation

Sofie Pollin, UC Berkeley/IMEC; Bart Adams, Stanford University; Ahmad Bahai, UC Berkeley

WN17-6 On Concurrent Transmissions in Multi-hop Wireless Networks with Shadowing Channels

Seung Min Hur, POSTECH; Shiwen Mao, Auburn University; Kwanghee Nam, POSTECH; Jeffrey Reed, Virginia Tech

Wed, 21 May 2008, 16:15-18:00

Room 311-C, BICC

WN18: IEEE 802.16/WiMAX Networks II

Chair: Apostolis Salkintzis, Motorola

WN18-1 ARQ Aware Scheduling for the IEEE 802.16 Base Station

Alexander Sayenko, Nokia; Olli Alanen, Timo Hamalainen, University of Jyväskylä

WN18-2 Access Service Network (ASN) Gateway Relocation Algorithms in WiMAX Networks

Zong-Hua Liu, Shin-Ying Pan, Jyh-Cheng Chen, National Tsing Hua University

WN18-3 A Multimedia Traffic Scheduler for IEEE 802.16 Point-to-Multipoint Networks

Spyros Xergias, Nikos Passas, Anastasia Lygizou, University of Athens; Apostolis Salkintzis, Motorola

WN18-4 Providing Location Service for Mobile WiMAX

Wenhua Jiao, Pin Jiang, Ruojun Liu, Alcatel-lucent; Wenbo Wang, Beijing University of Posts Telecommunications; Yuanyuan Ma, Alcatel-lucent

WN18-5 Speech Quality Aware Admission Control for Fixed IEEE 802.16 Wireless MAN

Thomas Michael Bohnert, Siemens AG; Dirk Staehle, University of Wuerzburg; Geng-Sheng Kuo, National Chengchi University; Yevgeny Koucheryavy, Tampere University of Technology; Edmundo Monteiro, University of Coimbra

WN18-6 Performance Analysis of UGS, rtPS, nrtPS Admission Control in WiMAX Networks

Sahar Ghazal, Jalel Ben-Othman, University of Versailles; Lynda Mokdad, University of Paris Dauphine

Thu, 22 May 2008, 8:30-10:15

Room 311-A, BICC

WN19: Wireless Sensor Networks V

Chair: Jehn-Ruey Jiang, National Central University

WN19-1 Hybrid PUSH-PULL for Data Diffusion in Sensor Networks without Location Information

Xu Cheng, Feng Wang, Jiangchuan Liu, Simon Fraser University

WN19-2 On Directional K-Coverage Analysis of Randomly Deployed Camera Sensor Networks

Liang Liu, Xi Zhang, Texas A&M University; Huadong Ma, Beijing University of Posts and Telecommunications

WN19-3 Greedy Hop Distance Routing using Tree Recovery on Wireless Ad Hoc and Sensor Networks

Shao Tao, A.L. Ananda, Mun Choon Chan, National University of Singapore

WN19-4 Location-Aided Topology Discovery for Wireless Sensor Networks

Mingze Zhang, Mun Choon Chan, A. L. Ananda, National University of Singapore

WN19-5 On the Use of Chinese Remainder Theorem for Energy Saving in Wireless Sensor Networks

Giuseppe Campobello, University of Messina; Alessandro Leonardi, Sergio Palazzo, University of Catania

WN19-6 Anonymous Path Routing in Wireless Sensor Networks

Jang-Ping Sheu, National Tsing Hua University; Jehn-Ruey Jiang, Ching Tu, National Central University

Thu, 22 May 2008, 8:30-10:15

Room 311-B, BICC

WN20: Security Issues in Wireless Networks I

Chair: Kui Wu, University of Victoria

WN20-1 Network Coding Aware Dynamic Subcarrier Assignment in OFDMA Wireless Networks

Xinyu Zhang, Baochun Li, University of Toronto

WN20-2 Multi-Source Multihop Wireless Networks: A Trellis Representation and Network Coding

Jing (Tiffany) Li, Meng Yu, Lehigh University

WN20-3 VANETs: Why use Beaconing at All ?

Dario Rossi, ENST; Roberta Fracchia, Motorola Labs; Michela Meo, Politecnico di Torino

WN20-4 Credit-Based User Authentication for Delay Tolerant Mobile Wireless Networks

Minghui Shi, Khaled AlMotairi, Xuemin Shen, Jon W. Mark, University of Waterloo; Dongmei Zhao, McMaster University ; Bruno R. Preiss, Research In Motion

WN20-5 A Distributed Algorithm for Finding Global Icebergs with Linked Counting Bloom Filters

Kui Wu, University of Victoria; Yang Xiao, University of Alabama; Jie Li, University of Tsukuba ; Bo Sun, Lamar University

WN20-6 Hybrid OFDMA/CSMA Based Medium Access Control for Next-Generation Wireless LANs

Yaser Pourmohammadi Fallah, Salman Khan, Panos Nasiopoulos, University of British Columbia; Hussein Alnuweiri, Texas A&M University, Doha

Thu, 22 May 2008, 8:30-10:15

Room 311-C, BICC

WN21: Network Designs and Protocols

Chair: Ping Wang, University of Waterloo

WN21-1 Delay Analysis of Distributed Reservation Protocol with UWB Shadowing Channel for WPAN

Kuang-Hao Liu, Sherman Shen, University of Waterloo; Ruonan Zhang, Lin Cai, University of Victoria

WN21-2 An Opportunistic Directional MAC Protocol for Multihop Wireless Networks with Switched Beam Directional Antennas

Osama Bazan, Muhammad Jaseemuddin, Ryerson University

WN21-3 An Acknowledgment-Based Scheme to Defend Against Cooperative Black Hole Attacks in Optimized Link State Routing Protocol

Soufiène Djahel, Farid Nait-Abdesselam, University of Sciences & Technologies of Lille; Ashfaq Khokhar, University of Illinois at Chicago

WN21-4 On the Enhancement to Timer-Based Stalling Avoidance Mechanism in HARQ Protocols

Yong Li, Wenbo Wang, Jiangfeng Ji, Mugen Peng, Beijing University of Posts and Telecommunications

WN21-5 A Novel Quaternion Design Construction For STBC

Huanfei Ma, Qinghui Lan, Haibin Kan, Fudan University; Hideki Imai, Chuo University

WN21-6 A Smart Antenna Assisted Gradient Broadcasting Data Delivery Protocol for Large-Scale WSN

Le Ding, Qinye Yin, Yinkuo Meng, Ang Feng, Huiming Wang, Xi'an Jiaotong University

Thu, 22 May 2008, 10:45-12:30

Room 311-A, BICC

WN22: Wireless Sensor Networks VI

Chair: Jun Zheng, University of Ottawa

WN22-1 An Efficient Fault-Prevention Clustering Protocol for Robust Underwater Sensor Networks

Cheng Li, Pu Wang, Memorial University of Newfoundland; Hussein Mouftah, Jun Zheng, University of Ottawa

WN22-2 Minimal Time and Conflict-Free Schedule for Convergecast in Wireless Sensor Networks

Hua-Wen Tsai, National Cheng Kung University; Tzung-Shi Chen, National University of Tainan

WN22-3 Routing of Emergency Data in a Wireless Sensor Network for Mines

Mandana Jafarian, Muhammad Jaseemuddin, Ryerson University

WN22-4 Reliable Transport with Memory Consideration in Wireless Sensor Networks

Hongchao Zhou, Xiaohong Guan, Chengjie Wu, Tsinghua University

WN22-5 Dynamic Spectrum Sharing Using Learning for Delay-Sensitive Applications

Fangwen Fu, Mihaela van der Schaar, UCLA

Thu, 22 May 2008, 10:45-12:30

Room 311-B, BICC

WN23: Security Issues in Wireless Networks II

Chair: Xinbing Wang, Shanghai Jiaotong University

WN23-1 Medium Access Control in Vehicle to Roadside Networks

Biplab Sikdar, Rensselaer Polytechnic Institute

WN23-2 A Call Admission Control Algorithm Based on Utility Fairness For Low Earth Orbit Satellite Networks

Zhen-Yu Na, Zhen-Yong Wang, Qing Guo, Ming-Chuan Yang, Harbin Institute of Technology

WN23-3 Adaptive Call Admission Control for Multi-Class Services in Wireless Networks

Hongwei Liao, Xinbing Wang, Shanghai Jiaotong University; Hsiao-Hwa Chen, National Cheng Kung University

WN23-4 Optimal Call Admission Control Policy for the RCS Schemes in Wireless Networks

Wenlong Ni, University of Toledo; Wei Li, Texas Southern University; Mansoor Alam, University of Toledo

WN23-5 Impact of Selfish Power Control on the Stability in Wireless Networks

Pei Li, Yinlong Xu, Chunpeng Zhang, Yuchong Hu, University of Science & Technology of China

WN23-6 SRK: A Distributed RFID Data Access Control Mechanism

Dijiang Huang, Zhibin Zhou, Arizona State University

Thu, 22 May 2008, 10:45-12:30

Room 311-C, BICC

WN24: Wireless Mesh Networks I

Chair: Linda Jiang Xie, University of North Carolina at Charlotte

WN24-1 Routing and Power Allocation for MIMO-Based Ad Hoc Networks with Dirty Paper Coding

Jia Liu, Y. Thomas Hou, Hanif D. Sherali, Virginia Polytechnic Institute and State University

WN24-2 MARIA: Interference-Aware Admission Control and QoS Routing in Wireless Mesh Networks

Xiaolin Cheng, Prasant Mohapatra, University of California at Davis; Sung-Ju Lee, Sujata Banerjee, Hewlett-Packard Laboratories

WN24-3 Practical Coding-Aware Mechanism for Opportunistic Routing in Wireless Mesh Networks

Yan Yan, Baoxian Zhang, Graduate University of Chinese

Academy of Sciences; Hussein Mouftah, University of Ottawa;
Jian Ma, Nokia Research Center

WN24-4 An Analysis of Opportunistic Routing in Wireless Mesh Network

Chun-Pong Luk, Wing-Cheong Lau, On-Ching Yue, The Chinese University of Hong Kong

WN24-5 An Analytical Model for Handoff Overhead Analysis in Internet-based Infrastructure Wireless Mesh Networks

Aditya Pathak, Akshay Mangalam Srivatsa, Jiang Xie, University of North Carolina at Charlotte

WN24-6 Connectivity Model for Wireless Mesh Networks

Mohamed Abou El Saoud, Hussein Al-Zubaidy, Samy Mahmoud, Carleton University

Thu, 22 May 2008, 14:00-15:45

Room 311-A, BICC

WN25: QoS and Resource Management in Wireless Networks

Chair: Yang Xiao, The University of Alabama

WN25-1 QoS Guaranteed Cross-layer Multiple Traffic Scheduling in TDM-OFDMA Wireless Network

Bo Bai, Zhigang Cao, Wei Chen, Tsinghua University; Khaled Ben Letaief, The Hong Kong University of Science and Technology

WN25-2 QOAR: Adaptive QoS Scheme in Multi-rate Wireless LANs

Ming Li, California State University, Fresno; Yang Xiao, The University of Alabama; Hua Zhu, San Diego Research Center; Imrich Chlamtac, Create-Net; Balakrishnan Prabhakaran, The University of Texas at Dallas

WN25-3 Robust End-to-End QoS Maintenance in Non-Contiguous OFDM Based Cognitive Radios

Joseph Wynn Mwangoka, Tsinghua University, Hong Kong University of Science and Technology; Khaled Ben Letaief, Hong Kong University of Science and Technology; Zhigang Cao, Tsinghua University

WN25-4 Admission Control for Providing QoS in Wireless Mesh Networks

Qiang Shen, Xuming Fang, Southwest Jiaotong University; Pan Li, Yuguang Fang, University of Florida

WN25-5 Joint Scheduling and Power Allocation in Multi-Channel Access Point Networks under QoS Constraints

Xiang Luo, Koushik Kar, Rensselaer Polytechnic Institute

WN25-6 Joint Stream Control and Scheduling in Multihop Wireless Networks with MIMO Links

Brendan Mumeey, Jian Tang, Timothy Hahn, Montana State University

Thu, 22 May 2008, 14:00-15:45

Room 311-B, BICC

WN26: Modeling and Performance Analysis I

Chair: Xinbing Wang, Shanghai Jiaotong University

WN26-1 Opportunistic Scheduler Evaluation Using Discriminatory Processor Sharing Model

Lei Lei, Chuang Lin, Tsinghua University

WN26-2 Tuning Up the Performance of Constant-Time Distributed Scheduling Algorithms via Majorization

Han Cai, Do Young Eun, North Carolina State University

WN26-3 Automated Planning of CPICH Power for enhancing HSDPA Performance at Cell Edges with Preserved Control of R99 Soft Handover

Lei Chen, Di Yuan, Linköping University

WN26-4 Impact of Super-Diffusive Behavior on Routing Performance in Delay Tolerant Networks

Sungwon Kim, Do Young Eun, North Carolina State University

WN26-5 On the End-to-End Delay Performance of Spatially Correlated Wireless Line Networks

Min Xie, University College London; Martin Haenggi, University of Notre Dame; Kai-Kit Wong, University College London

Thu, 22 May 2008, 14:00-15:45

Room 311-C, BICC

WN27: Wireless Mesh Networks II

Chair: Yuan Xue, Vanderbilt University

WN27-1 Joint Routing and Scheduling Optimization in Wireless Mesh Networks with Directional Antennas

Antonio Capone, Ilario Filippini, Politecnico di Milano; Fabio Martignon, University of Bergamo

WN27-2 Distributed Topology Control in Multi-Channel Multi-Radio Mesh Networks

Hua Zhu, ArgonST/San Diego Research Center; Kejie Lu, University of Puerto Rico at Mayagüez; Ming Li, California State University, Fresno

WN27-3 HOF: Hybrid Opportunistic Forwarding for Multi-hop Wireless Mesh Networks

Zhengqing Hu, Chen Khong Tham, NUS

WN27-4 Oblivious Routing for Wireless Mesh Networks

Jonathan Wellons, Yuan Xue, Vanderbilt University

WN27-5 A Scalable Billing Architecture for Future Wireless Mesh Backhauls

Said Zaghoul, Wolfgang Bziuk, Admela Jukan, Technische Universität Carolo-Wilhelmina zu Braunschweig

WN27-6 Interference-Aware Routing Metric for Improved Load Balancing in Wireless Mesh Networks

Sonia Waharte, Brent Ishibashi, Raouf Boutaba, University of Waterloo; Djamel Meddour, France Telecom Research

Thu, 22 May 2008, 16:15-18:00

Room 311-A, BICC

WN28: Modeling and Performance Analysis II

Chair: Ruhai Wang, Lamar University

WN28-1 Enhancing TCP Performance in AMC Based Broadband Wireless Access Networks

Minal Mishra, Microsoft; Krishna Sivalingam, Univ of Maryland

WN28-2 Experimental and Comparative Analysis of Channel Delay Impact on Rate-based and Window-based Transmission Mechanisms over Space-Internet Links

Ruhai Wang, Wei Tai Hsu, Xuan Wu, Tiaotiao Wang, Lamar University; Xinbing Wang, Shanghai Jiaotong University

WN28-3 Energy Efficient Location-Aware Networks

Yuan Shen, Moe Win, MIT

WN28-4 Energy Efficient Expanding Ring Search for Route Discovery in MANETs

Ngoc Duy Pham, Hyunseung Choo, Sungkyunkwan University

WN28-5 Dealing with Sudden Bandwidth Changes in TCP

Euiyul Ko, Donghyeok An, Ikjun Yeom, KAIST

WN28-6 PAQ: A starvation-resistant alternative to Proportional Fair

Soshant Bali, Sridhar Machiraju, Hui Zang, Sprint

Thu, 22 May 2008, 16:15-18:00

Room 311-B, BICC

WN29: Cooperative Communication and Networking

Chair: **Wei Zhang**, Hong Kong University of Science and Technology

WN29-1 Reliable Routing for Roadside to Vehicle Communications in Rural Areas

Shen Wan, Jian Tang, Richard Wolff, Montana State University

WN29-2 Efficient Power Allocation in Cooperative OFDM System with Channel Variation

Morteza Ibrahim, Ben Liang, University of Toronto

WN29-3 Communication Complexity Evaluation for Longest-lived Directional Multicasting in WANETs

Xiaofei Liu, University of Ottawa; Song Guo, The University of Aizu; Abdulmotaleb El Saddik, University of Ottawa

WN29-4 Cooperative Multiplexing and Scheduling in Wireless Relay Networks

Yi Shi, Wei Zhang, Khaled Ben Letaief, The Hong Kong University of Science and Technology

WN29-5 TCP Level Investigation of Parallel Transmission over Heterogeneous Wireless Networks

Alessro Bazzi, Gianni Pasolini, WiLAB, IEIT-CNR, University of Bologna

WN29-6 Distributed Interference Cancellation for Dynamic Spectrum Sharing

Kentaro Nishimori, NTT Corporation

Thu, 22 May 2008, 16:15-18:00

Room 311-C, BICC

WN30: Wireless Mesh Networks III

Chair: **Yu Wang**, University of North Carolina at Charlotte

WN30-1 A New Link Scheduling Algorithm for Concurrent Tx/Rx Wireless Mesh Networks

Kwan-Wu Chin, University of Wollongong

WN30-2 Directionality As Needed - Achieving Connectivity in Wireless Mesh Networks

Vishwanath Ramamurthi, Abu Ahmed Reaz, University of California, Davis; Sudhir Dixit, Nokia Siemens Networks; Biswanath Mukherjee, University of California, Davis

WN30-3 Testbed Experimentation of a Meshed Tree Routing with Local Link State for Wireless PAN Mesh

Rui Zhang, Tae Rim Park, Myung J Lee, City University of New York; Hakyung Jung, Seoul National University; Jaehong Ryu, ETRI

WN30-4 Joint Power Control and Link Scheduling in Wireless Networks for Throughput Optimization

Liqun Fu, Soung Chang Liew, Jianwei Huang, The Chinese University of Hong Kong

WN30-5 Load Balancing Routing in Three Dimensional Wireless Networks

Fan Li, University of North Carolina at Charlotte; Siyuan Chen, Yu Wang, University of North Carolina at Charlotte; Jiming Chen, Zhejiang University

WN30-6 A Low Intercell Interference Variation Scheduler for OFDMA Networks

Gabor Fodor, Chrysostomos Koutsimanis, Ericsson Research

Tue, 20 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

WN1p: Resource Management for WLAN

WN1p-1 Dynamic Budget Partition Scheme for Integrated Voice/Video/Data Traffic in the IEEE 802.11e WLANs

Yang Xiao, University of Alabama; Frank Haizhon Li, Univ. of South Carolina; Ming Li, California State University; Jingyuan Zhang, University of Alabama; Bo Li, Hong Kong Univ. of Science Technology; Fei Hu, Rochester Institute of Technology

WN1p-2 Inductive QoS Packet Scheduling for Adaptive Dynamic Networks

Maliika Bourenane, University of Es-Senia; Abdelhamid Mellouk, University Paris 12; Djilali Benhamamouche, University of Es Senia

WN1p-3 On Exploiting Location Information for Service Differentiation in IEEE 802.11 Hot Spots

Hwangnam Kim, Sunshin An, Korea University; Eun Sook Lee, SK Telecom

WN1p-4 The Compensation Model for Utilizing a Frame-based Scheduling Algorithm in High-speed Wireless Networks

Joo-Young Baek, Young-Joo Suh, POSTECH

WN1p-5 Wireless Scheduling Algorithms with O(1) Overhead for M-hop Interference Model

Yung Yi, Mung Chiang, Princeton University

WN1p-6 Energy based carrier sensing in integrated medical environments

Bin Zhen, Huan-bang Li, National Institute of Information Communications Technology; Shinsuke Hara, Osaka City University; Ryuji Kohno, Yokohama National University

WN1p-7 On The Rate-Distance Adaptability of Slotted Aloha

Chih-Cheng Tseng, Jinwen University of Science and Technology; Shao-Yu Lien, National Taiwan University; Ramjee Prasad, Aalborg University

Wed, 21 May 2008, 8:30-10:15

Exhib. No.2 Hall, BICC

WN2p: Wireless Sensor Networks

WN2p-1 Anchor Node Based Virtual Modeling of Holes in Wireless Sensor Networks

Fucai Yu, Younghwan Choi, Soochang Park, Euisin Lee, Ye Tian, Sang-Ha Kim, Chungnam National University

WN2p-2 Robust Distributed Localization with Data Inference for Wireless Sensor Networks

Yu Zhang, Lin Zhang, Xiuming Shan, Tsinghua University

WN2p-3 A Scalable Low-Power WSN Solution for Large-scale Building Automation

Pieter De Mil, Tim Allemeersch, Ingrid Moerman, Piet

Demeester, Ghent University;

Wim De Kimpe, Greenpeak Technologies

WN2p-4 On the Effect of Localization Errors on Geographic Routing in Sensor Networks

Bo Peng, University of Leeds; Rainer Mautz, ETH; Andrew H.

Kemp, University of Leeds; Washington Ochieng, Imperial

College; Qinghua Zeng, NUA

WN2p-5 PULRP: Path Unaware Layered Routing Protocol for Underwater Sensor Networks

Sarath Gopi, Kannan Govindan, Deepthi Chander, Uday. B.

Desai, S. N Merchant, IIT-Bombay

WN2p-6 Providing Reliable Data Transport for Dynamic Event Sensing in Wireless Sensor Networks

Yuyan Xue, Byrav Ramamurthy, Yong Wang, University of

Nebraska-Lincoln

WN2p-7 Underwater Acoustic Sensor Networks: Target Size Detection and Performance Analysis

Qilian Liang, University of Texas at Arlington; XiuzhenCheng,

George Washington University

Wed, 21 May 2008, 10:45-12:30

Exhib. No.2 Hall, BICC

WN3p: Wireless Ad Hoc and Mesh Networks

WN3p-1 Distributed Multi-radio Channel Allocation in Multi-Hop Ad Hoc Networks

Lin Gao, Xinbing Wang, Youyun Xu, Wen Chen, Shanghai

Jiaotong University

WN3p-2 A Distributed Group Mobility Adaptive Clustering Algorithm for Mobile Ad Hoc Networks

Yan Zhang, Jim Mee Ng, Nanyang Technological University

WN3p-3 Adaptive Rate Control for VoIP in Wireless Ad Hoc Networks

Hongqi Zhang, Jiyang Zhao, Oliver Yang, University of Ottawa

WN3p-4 Optimized Routing Framework for Intermittently Connected Mobile Ad Hoc Networks

Yaozhou Ma, M. Rubaiyat Kibria, Abbas Jamalipour, University of Sydney

WN3p-5 A Multichannel Reservation Multiple Access Protocol for Mobile Ad Hoc Networks

Kai Liu, Xiaoqin Xing, Beijing University of Aeronautics and Astronautics

WN3p-6 Practical Routing and Channel Assignment Scheme for Mesh Networks with Directional Antennas

Wei Zhou, Xi Chen, Daji Qiao, Iowa State University

WN3p-7 Finding the Fastest Path in Wireless Networks

Yi Xu, Wenye Wang, North Carolina State University

Wed, 21 May 2008, 16:15-18:00

Exhib. No.2 Hall, BICC

WN4p: Cognitive Radio Networks

WN4p-1 User Cooperation in Heterogeneous Cognitive Radio Networks with Interference Reduction

Chunhua SUN, Hong Kong University of Science and

Technology; Khaled Ben Letaief, Hong Kong Univ. Science & Technology

WN4p-2 Synchronized MAC Protocol For Multi-hop Cognitive Radio Networks

Yogesh Reddy Kondareddy, Prathima Agrawal, Auburn

University

WN4p-3 Adaptive Transmission Protocol for Protection of Primary Users in Cognitive Radio

Hsin-Ping Fan, Chui-Chiu Kung, Cheng-Fu Chou, National

Taiwan University

WN4p-4 Carrier Sensing based Multiple Access Protocols for Cognitive Radio Networks

Shao-Yu Lien, Institute of Communication Engineering, National

Taiwan University; Chih-Cheng Tseng, Jinwen University of

Science Technology; Kwang-Cheng Chen, Institute of

Communication Engineering, National Taiwan University

WN4p-5 Topology Control for Reliable Sensor-to-Sink Data Transport in Sensor Networks

Jiong Wang, Sirisha Medidi, Washington State University

WN4p-6 Throughput Analysis of a p-Persistent CSMA

Protocol with QoS Differentiation for Multiple Traffic Types

Richard MacKenzie, University of Leeds; Tim O'Farrell,

University of Swansea

WN4p-7 Multicommodity Lifetime Routing for Wireless Sensor Networks with Multiple Sinks

Vahid Shah-Mansouri, Hamed Mohsenian Rad, Vincent Wong,

University of British Columbia

Thu, 22 May 2008, 8:30-10:15

Exhib. No.2 Hall, BICC

WN5p: Topics in Wireless Networks (1)

WN5p-1 Adaptive Modulation-based TCP-Aware Uplink Scheduling in IEEE 802.16 Networks

Hemant Kumar Rath, Abhay Karandikar, IIT Bombay; Vishal

Sharma, Metanoia Inc.

WN5p-2 A Power Division Reuse Partitioning Scheme with Half Frequency Reuse Factor for OFDMA Downlink Systems

Taehoon Kwon, Hyungjoon Song, Jemin Lee, Youngju Kim,

Yonsei Univ.; Jonghyuk Lee, Samsung Electronics Co.; Daesik Hong, Yonsei Univ.

WN5p-3 VoIP over WLANs by Adapting Transmitting Interval and Call Admission Control

Zhuo Chen, Lingyun Wang, Feng Zhang, Xinbing Wang, Wen Chen, Shanghai Jiaotong University

WN5p-4 Capacity Planning for Voice/Data Traffic in IEEE 802.11e Based Wireless LANs

Yiqun Wu, Yanfeng Zhu, Zhisheng Niu, Tsinghua University; Jing Zhu, Intel Corp.

WN5p-5 On the Impact of Selfish Behaviors in Wireless Packet Scheduling

Zhen Kong, the University of Hong Kong; Yu-Kwong Kwok, Colorado State University; Jiangzhou Wang, Southeast University

WN5p-6 Improving Videophone Transmission over Multi-rate IEEE 802.11e Networks

Tiantian Guo, Jianfei Cai, Chuan Heng Foh, Yu Zhang, Nanyang Technological University

WN5p-7 A Dependable Clustering Protocol for Survivable Underwater Sensor Networks

Cheng Li, Pu Wang, Memorial University of Newfoundland; Jun Zheng, Hussein Mouftah, University of Ottawa

Thu, 22 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

WN6p: Topics in Wireless Networks (2)

WN6p-1 Vertical Handover between Wireless Standards

Aris Moustakas, Nikos Dimitriou, Panayotis Mertikopoulos, University of Athens

WN6p-2 Call Admission Control for Mobile Agent Based Handoff in Wireless Mesh Networks

Bo Rong, University du Quebec; Yi Qian, National Institute of Standards Technology; Kejie Lu, University of Puerto Rico at Mayaguez; Michel Kadoch, University du Quebec

WN6p-3 Delegated IP: A Mobile IPv6-based Protocol to Support Session Delegation

Rodolfo Kohn, Intel Corporation

WN6p-4 Super-Resolution Time of Arrival for Indoor Localization

David Humphrey, Mark Hedley, CSIRO

WN6p-5 Delay-Differentiated Gossiping in Delay Tolerant Networks

Parameswaran Ramanathan, Aarti Singh, University of Wisconsin-Madison

WN6p-6 Joint Power and Rate Control in Cognitive Radio Networks: A Game-Theoretical Approach

Pan Zhou, Wei Yuan, Wei Liu, Wenqing Cheng, Huazhong University of Science and Technology

WN6p-7 WRGP: Weight-Aware Route Guiding Protocol for Wireless Sensor Networks with Obstacles

Chang Chih-Yung, Ju Wei-Cheng, Tamkang University; Chang Chao-Tsun, Hsiuping Institute Technology; Chen Yu-Chieh, Tamkang University

General Symposium

Wed, 21 May 2008, 8:30-10:15

Room 202, BICC

GS01: Satellite Communications

Chair: Igor Bisio, University of Genoa

GS01-1 Code Acquisition for Next Generation Mobile Broadband Satellite Services

Alessandro Vanelli-Coralli, Giovanni Emanuele Corazza, Claudio Palestini, Raffaella Pedone, Marco Villanti, University of Bologna; Pansoo Kim, Ho-Jin Lee, Electronics and Telecommunications Research Institute

GS01-2 Power and Bandwidth Effective Data Communications in Disaster Relief Operations through a Satellite-based Disruption Tolerant Network Paradigm

Tomaso de Cola, DLR; Mario Marchese, University of Genoa; Annamaria Raviola, Selex Communications

GS01-3 Proactive vs. reactive DVB-RCS terminal using ACM techniques

Tommaso Pecorella, Romano Fantacci, Simone Bracciali, Luigi Chisci, Università di Firenze; Maria-Angeles Vazquez Castro, Universidad Autónoma de Barcelona

GS01-4 Concatenated eIRA Codes for Tamed Frequency Modulation

Jianrong Bao, Yafeng Zhan, Jianhua Lu, Tsinghua University
GS01-5 Symmetric Distributed Source Coding Using LDPC Code

Baochun Bai, University of Alberta; Yang Yang, Texas A&M University; Pierre Boulanger, Janelle Harms, University of Alberta

GS01-6 WAVE A2: WAVESat and LEO Mission Architectures

Marco Lucente, Emiliano Re, Tommaso Rossi, Marina Ruggieri, University of Rome "Tor Vergata"; Antonio Iera, Antonella Molinaro, Salvatore Pulitanò, University "Mediterranea" of Reggio Calabria

Wed, 21 May 2008, 10:45-12:30

Room 202, BICC

GS02: Satellite Networking

Chair: Ruhai Wang, Lamar University

GS02-1 Packet Loss and Delay Combined Optimization for Satellite Channel Bandwidth Allocation Controls

Igor Bisio, Mario Marchese, University of Genoa

GS02-2 Experimental Investigation of CCSDS File Delivery Protocol (CFDP) over Cislunar Communication Links with Intermittent Connectivity

Ruhai Wang, B. L. Shrestha, Xuan Wu, Erin Tade, Tiaotiao Wang, Lamar University; Xinbing Wang, Shanghai Jiaotong University

GS02-3 TESLA with FLUTE over Satellite Networks

Lei Liang, Haitham Cruickshank, Zhili Sun, UniS; Chamil Kulatunga, Gorry Fairhurst, UoA

GS02-4 Hop-by-Hop Local Flow Control over InterPlanetary Networks based on DTN Architecture

Floriano De Rango, Mauro Tropea, University of Calabria;
Giovanni Battista Laratta, Salvatore Marano, University of Calabria

GS02-5 Effects of Applying High-Speed Congestion Control Algorithms in Satellite Network

Xiuchao Wu, Mun Choon Chan, A.L. Ananda, National University of Singapore

GS02-6 Intelligent Weather Aware Scheme for Satellite Systems

Kamal Harb, Changcheng Huang, Carleton University; Anand Srinivasan, Brian Cheng, Eion Inc.

Thu, 22 May 2008, 8:30-10:15

Room 201-C, BICC

GS03: Multimedia Satellite Systems

Chair: Lu Jianhua, Tsinghua Univ.

GS03-1 Foliage Clutter Modeling Using the UWB Radar

Jing Liang, Qilian Liang, University of Texas at Arlington;
Sherwood Samn, Air Force Research Lab/RHX

GS03-2 Wavelet-Based SNR Analysis in Building Satellite Terminal Fault Identification System

Liang Xu, Changcheng Huang, Carleton University

GS03-3 Adaptive Handoff Algorithm for Multi-beam GEO Mobile Satellite System

Li Song, Ai-jun Liu, Yi-fei Ma, PLA University of Science & Technology

GS03-4 A Differential Based Approach for Sense-Through-Foliage Target Detection using UWB Radar Sensor Networks

Jing Liang, Qilian Liang, University of Texas at Arlington;
Sherwood Samn, Air Force Research Lab/RHX

GS03-5 Protocol Structure Overview of QoS Mapping over Satellite Networks

Maurizio Mongelli, Mario Marchese, University of Genova

GS03-6 A Backward-Compatible Solution for Next Generation DVB-C System

Jing Lei, WINLAB, Rutgers University; Wen Gao, Thomson Corporate Research

Thu, 22 May 2008, 10:45-12:30

Room 201-C, BICC

GS04: Data Storage Technologies

Chair: Nedeljko Varnica, Marvell Semiconductor

GS04-1 Forward Message Passing Detector for Probe Storage

Tom Parnell, Warwick University; Haralampos Pozidis, IBM Research GMBH; Oleg Zaboronski, Warwick University

GS04-2 Nonlinear Transition Shift and Write Precompensation in Perpendicular Magnetic Recording

Zheng Wu, Neal Bertram, Paul Siegel, Jack Wolf, University of California, San Diego

GS04-3 A Chase-GMD Algorithm for Soft-Decision Decoding of Reed-Solomon Codes on Perpendicular Recording Channels

Haitao Xia, Link A Media Devices; Han Wang, J. Cruz, University of Oklahoma

GS04-4 MAP-based Timing Recovery for Magnetic Recording

Raman Venkataramani, M. Fatih Erden, Seagate Technology

GS04-5 Extended Kalman Filter based Acquisition Timing Recovery for Magnetic Recording Read Channels

Euseok Hwang, Rohit Negi, B. V. K. Vijaya Kumar, Carnegie Mellon University

GS04-6 Reverse Concatenation of Product and Modulation Codes

Thomas Mittelholzer, Evangelos Eleftheriou, IBM Zurich Research Laboratory

Thu, 22 May 2008, 14:00-15:45

Room 202, BICC

GS05: Multimedia Broadcasting Technologies

Chair: Chao Zhang, Tsinghua Univ.

GS05-1 Cross-Layer Optimization for Packetized Video Communications over Wireless Mesh Networks

Dalei Wu, Song Ci, University of Nebraska-Lincoln; Haohong Wang, Marvell Semiconductors

GS05-2 Combination of Push and Pull Scheduling for Mobile Interactive Data Broadcasting

Sang Hyuk Kang, Yoon Goo Nam, Univ. of Seoul

GS05-3 Energy-Efficient Cooperative Techniques for Multimedia Services over Future Wireless Networks

Federico Albiero, Create-Net; Marcos Katz, VTT; Frank Fitzek, Aalborg University

GS05-4 Virtual MIMO-based Single Frequency Network

Chun-he Qu, Institute of Computing Technology, Chinese Academy of Sciences

GS05-5 A Multicast nVoD Schema with Zero-Overhead Implicit Error Correction

Francisco J. Gonzalez-Castano, Rafael Asorey-Cacheda, University of Vigo

GS05-6 Efficient MIMO-OFDM Schemes for Future Terrestrial Digital TV with Unequal Received Powers

Youssef Nasser, Jean-Francois Helard, Matthieu Crussiere, Oudomsack Pasquero, Institute of Electronics and Telecommunications of Rennes

Thu, 22 May 2008, 16:15-18:00

Room 202, BICC

GS06: ORT Other Related Technologies

Chair: Defeng (David) Huang, The Univ. of Western Australia

GS06-1 Cooperative Transmission for Underwater Acoustic Communications

Zhu Han, Boise State University; Yan Sun, University of Rhode Isl; Hongyuan Shi, Steven Institute of Technology

GS06-2 Convolutional Code Spread Multicarrier System with Complementary Sequences

Chao Zhnag, Tsinghua Univ.; Dong Cheng, Yonghua Zhang, Xi'an Jiaotong University

GS06-3 A Reliable and Power Efficient Beacon Structure for Cognitive Radio Systems

Zhongding Lei, Francois Chin, Institute for Infocomm Research

GS06-4 A Wavelet Based Long Range Signal Strength Prediction in Wireless Networks

Xiaobo Long, Biplab Sikdar, Rensselaer Polytechnic Institute

GS06-5 Network Topology Design using Analytic Hierarchy Process

Noriaki Kamiyama, Daisuke Satoh, NTT Advanced Technology

GS06-6 Automatic Discovery of Physical Topology in Heterogeneous Multi-vendor Ethernet Networks

János Farkas, Ericsson; Marcos Rogério Salvador, Vinicius Garcia de Oliveira, Giovanni Curiel dos Santos, CPqD

Wed, 21 May 2008, 14:00-15:45

Exhib. No.2 Hall, BICC

GS1p: Topics in Communications

GS1p-1 Mitigating the Effects of Track Mis-Registration in Bit-Patterned Media

Sheida Nabavi, B. V. K. Vijaya Kumar, James A. Bain, Carnegie Mellon University

GS1p-2 Graph-Matched LDPC Codes for Partial-Response Channels

Andrei P. Legg, Bartolomeu F. Uchôa-Filho, Federal University of Santa Catarina

GS1p-3 Radiation Characteristics and Interference of Large Broadband Power Line (BPL) Deployments

Song Liu, Larry Greenstein, Rutgers University

GS1p-4 Adaptive SD-OFDM in Time-Frequency Selective Fading Channel

Xiaoming Tao, Chao Zhang, Jianhua Lu, Tsinghua Univ.

GS1p-5 A Multi Gigabit FPGA-based 5-tuple classification system

Antonis Nikitakis, Ioannis Papaefstathiou, Technical University of Crete

GS1p-6 Experimental Evaluation of Detection Methods for Finger Identification Schemes Based upon Intra-body Communication

Nao Kobayashi, Abdullah M. Alshehab, Jordi Agud Ruiz, Shigeru Shimamoto, Waseda Univ.

GS1p-7 On the Investigation of Path Preference in End-to-End Network Measurements

Xing Jin, Qiuyan Xia, S.-H. Gary Chan, HKUST

**Engineering Management
Mini-Conference**

Tue, 20 May 2008, 14:00-15:45

Room 201-C, BICC

EM01: Innovation Capability Development and Competitiveness

Chair: Charles Rubenstein, Pratt Institute

EM01-1 Science, Innovation and Competitiveness- An international assessment and comparison

Tariq Durrani, Sheila Forbes, University of Strathclyde

EM01-2 Smoothing Innovation Discontinuities

Paul Bannerman, NICTA

EM01-3 The Evolution of Combinative Capabilities and the Cultivation of Indigenous Innovative Capabilities: A Case from CTG

Xiujiang Wang, Jisheng Peng, Nanjing University

EM01-4 Study on the Channels of International Technology Spillovers: A view from the interaction of trade and FDI

Xiangyu Yang, Beijing Jiaotong University; Yuan Cheng, Tsinghua University

EM01-5 The Changing Motives for Nascent

Entrepreneurship in China:Using Global Entrepreneurship Monitor Data

Xiangyu Yang, Beijing Jiaotong University; Yuan Cheng, Jian Gao, Tsinghua University

Tue, 20 May 2008, 16:15-18:00

Room 201-C, BICC

EMpa: Issues in Technology Innovation Management

Organizer / Moderator: Xudong Gao, Tsinghua University

Panelists:

Celia Desmond, World Class Telecommunications

Tariq Durrani, Univ. of Strathclyde

Carl Tsu

John Chiang

Abstract:

The management of technology innovation in different places of the world might be very different. The panel will address management model similarities and differences in North America, Europe, and Asia, and discuss the models and best practices that will increase innovation and bring us all together.

Wed, 21 May 2008, 14:00-15:45

Room 201-C, BICC

EM02: technology Integration and Sector Innovation

Chair: Xudong Gao, Tsinghua University

EM02-1 The Study on Concept Evolution and Process of Technology Integration

Jiang Wei, TongAn Wang, ZheJiang University

EM02-2 Technological Innovations in Broadband and Layered Policy Model for ICT Sector

Muhammad Khalil Shahid, Tang Shoulian, Beijing University of Posts & Telecommunications

EM02-3 A Technology Selection Framework for the Telecommunications Industry in Developing Countries

Kamal Ruder, Marthinus W. Pretorius, B. T. Maharaj, University of Pretoria

EM02-4 A Modal Analysis of Industrial Specialization for Innovation Intensive Service: Case of Telematics Service Industry

Chia-Han Yang, Institute of Management of Technology, National Chiao Tung University; Jou-Chen Chen, Institute of Education, National Chiao Tung University; Joseph Z Shyu, Institute of Management of Technology, National Chiao Tung University

EM02-5 The Analysis of R&D Outsourcing in Zhejiang Automobile Manufacturing Factory

Wu Bei, Zhejiang Gongshang University; Jin Chen, Zhejiang University; Wang Shanshan, Zhejiang Gongshang University

Wed, 21 May 2008, 16:15-18:00

Room 201-C, BICC

EM03: Innovation and Supply Chain Management

Chair: Jian Gao, Tsinghua University

EM03-1 Cost Optimization Model for Linear Scheduling Problems considering Work Continuity

Shu-Shun Liu, Chang-Jung Wang, National Yunlin University of Science & Technology

EM03-2 Flexibility and amplification measures in a supply chain model

Javier Pereira, Luciano Ahumada, Fernando Paredes, Universidad Diego Portales

EM03-3 Flexible Data Input Layer Architecture (FDILA) for Quick-Response Decision Making Tools in Volatile Manufacturing Systems

Siamak Tavakoli, Alireza Mousavi, Alexander Komashie, Brunel University

EM03-4 A Methodology for Information Quality Assessment in Data Warehousing

Ying Su, Tsinghua University

EM03-5 Research on the UI Integration Architecture of Service System

Jie Hou, Shijun Liu, Xiangxu Meng, Shandong University

Thu, 22 May 2008, 8:30-10:15

Room 202, BICC

EM04: Innovation and Project management

Chair: Tariq Durrani, University of Strathclyde

EM04-1 Application of Time-Dependent Fault Tree Models for the Analysis of Project Schedule Failure Conditions

George Anders, Technical University of Lodz; Marcin Kryszynski, Alfa-Zeta

EM04-2 Factoring Account Receivables towards Mitigating Cash Flow Fluctuation for Construction Projects

Chen Jieh-Haur, Chen Wei-Hsiang, National Central University

EM04-3 Networking Business Model In Regional Medical Service-Case of Chikamori Medical Group in Kochi, Japan-

Feng Liu, Makoto Hirano, Peiqian Liu, Kochi University of Technology

EM04-4 UK's Low-carbon Objectives and Generation Costs Analysis

Dan-hui Wen, Wei-ku Wu, Tsinghua University

EM04-5 A Framework of Critical Factors for Construction Partnerships in Taiwan

Wei Tong Chen, Ying-Hua Huang, National Yunlin University of Science and Technology; Chien-Liang Lin, National Kaohsiung First University of Science and Technology; Leonard Mortis, National Yunlin University of Science and Technology