

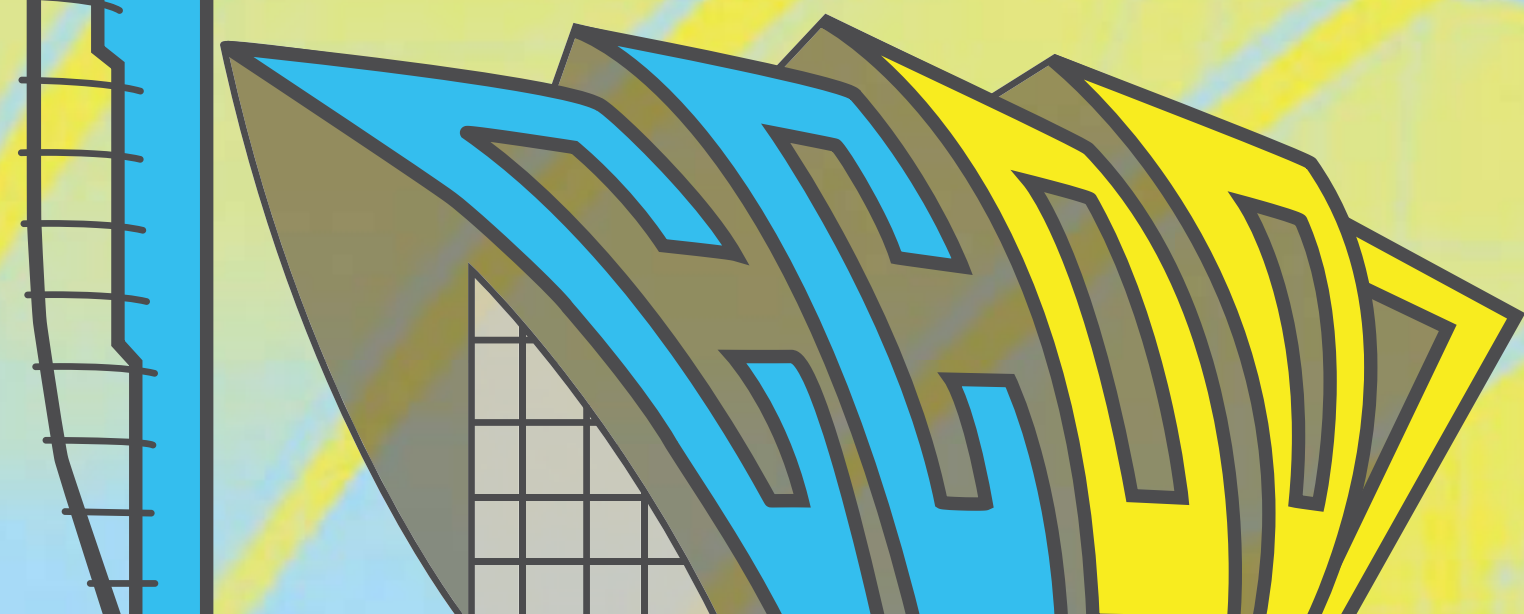
Final Programme



IEEE



IEEE
COMMUNICATIONS
SOCIETY



2007 IEEE International Conference on Communications

24-28 June 2007 Glasgow, Scotland Scottish Exhibition & Conference Centre (SECC)

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Welcome from the Executive Chair



Welcome to ICC-2007!

On behalf of the Organising Committee it gives me immense pleasure to welcome you to the IEEE International Conference on Communications 2007 – ICC-2007, being held on 24-28 June 2007 at the Scottish Exhibition & Conference Centre (SECC) in

Glasgow, Scotland.

With its motto – Scotland with Style – Glasgow prides itself as Scotland's leading cosmopolitan city, teaming with museums and galleries displaying avant garde art, elegant shops and haute cuisine restaurants; stylish bars and lively clubs all add to that create a uniquely friendly and welcoming ambience for the visitor, the tourist and the local citizen. The SECC is the largest purpose built convention centre in the UK, outside London; and depicted by the 'Armadillo', represents by an iconic building, which is increasingly being recognised at par with the Sydney Opera House or the London 'Gherkin'.

The Conference theme—Smart Communications Technologies for Tomorrow (SCOTT)—provides a clear focus for the Conference that emphasizes the growing importance of new developments in communications systems and technologies – developments that are central to the growth and success of global economies, business environments and social pursuits. In this context ICC-2007 offers an excellent opportunity to learn of the latest developments, and an unparalleled platform for identifying current trends and charting future directions

An exciting Technical Programme has been put together by a careful review of over 2600 submissions, conducted by an army of experts under the able leadership of John Thompson and Ivan Andonovic, the Technical Programme Committee Chairs and the associated Symposia chairs. The Symposia address all aspects of

communications technologies, systems and practices.

A major innovation in the Conference Program is the inclusion of a CEO Forum, organised by the General Chair of the Conference, Mr. Arun Sarin, Chief Executive of the Vodafone Group, where some of the world's leading industrialists will give us the benefit of their wisdom, experience and foresight, by making presentations on 'Convergence in the Communications industry'.

The technical sessions are accompanied by a set of application and tutorial sessions where hot topics on a range of communications issues will be debated by leading experts, and where international authorities will share their knowledge and skills. A flourishing exhibition has been planned to run in parallel with the technical sessions where companies and professional organisations will showcase the latest developments in communication systems, products and services.

A rich and varied social programme has been organised for you. The welcome reception at the Glasgow Science Centre will appeal to your curiosity, and will offer a superb opportunity to meet colleagues, renew acquaintances and make new friends. The Conference Banquet in the elegant Victorian splendour of the Kelvingrove Art Gallery & Museum will gratify the palate and the mind. The combination of this unique venue and traditional Scottish hospitality in the convivial company of the Conference participants will ensure that this evening will be long remembered.

In addition to attending the Conference, do take advantage and visit other parts of Scotland, enjoy the exotic scenery, play a few rounds of golf, meet the ever hospitable people and have a memorable stay.

I look forward to welcoming you to Glasgow in 2007.

Tariq S Durrani, *Executive Chair*
IEEE ICC-2007



Welcome from the TPC Co-chairs

On behalf of the Technical Programme Committee of IEEE ICC-2007, it is with great honour that we welcome you to the historic city of Glasgow for this flagship IEEE event. Throughout its long history, Glasgow has been central to the economic health of Scotland and the United Kingdom. Initially this was from excellence in heavy engineering such as shipbuilding, when it was referred to as the 'Second City of the Empire', and recently in advanced technologies such as micro-electronics. The Scots nation is fiercely proud of its impact on technology bringing the world great scientists – John Clerk Maxwell, Alexander Graham Bell and John Logie Baird to name a few – who have been the root of key inventions in communications and broadcast.

As is the tradition of IEEE ICC, the Technical Programme features a set of Symposia outlining the latest research and development results in communications and networking. These core technical sessions are strongly supported by business Applications Sessions and panels where industry leaders address the future evolution of the telecommunications sector. In addition, the programme includes Tutorials and Workshops hosted by internationally recognized experts.

The overall programme comprises 11 Symposia, 8 Applications Sessions, 16 Tutorials and 4 Workshops and commences on the morning of Sunday, 24th June 2007, with tutorials and workshops. An exciting innovation during the opening Plenary Session – on the morning of Monday, 25th June – is the inclusion of a CEO Forum. The Symposia and Applications Sessions are presented over 15 parallel tracks and begin on the afternoon of the 25th June, finishing on the afternoon of the 27th June. The programme ends on Thursday 28th June 2007 with additional tutorials and workshops.

IEEE ICC-2007 enjoyed over 2600 submissions, maintaining and growing the level of engagement from our community, building on the established work of previous ICC and GLOBECOM committees. It gives us great pleasure to record our heartfelt thanks to the volunteer efforts of the entire IEEE ICC-2007 technical program and organization committees. Our gratitude goes out to the authors who submitted their work, the Symposia Chairs and Vice-Chairs, Technical Programme Committee members, reviewers who supported the peer review process, the Workshop Chairs who have organized meetings for their own particular professional groups and everyone else that contributed to putting together a comprehensive, multi-faceted programme.

In excess of 1000 international domain experts participated in the peer review process. Based on the results of this rigorous process, 1070 best papers were selected for presentation and publication in IEEE ICC-2007 Proceedings, representing an acceptance ratio of approximately 39%. In order to maintain the mix of presentation styles and in particular to encourage more interactions, IEEE ICC-2007 has organised sessions designated as poster. It must be stressed that the Technical Programme has been derived through a completely transparent process and the papers selected represent the best quality submissions regardless of presentation format. Publication in the Proceedings does not distinguish between presentation styles but reflects the highest quality research results from our community. With 140 sessions featuring lecture style presentations and 10 sessions featuring poster style presentations, the 11 Symposia cover a variety of areas ranging from signal processing, wireless communications to optical networks.

The Local Organising Committee has from the outset been committed to ensuring that the event is a memorable one via the excellence of the technical programme, the strong mix of industrial and academic participation, as well as a dynamic and vibrant forum for networking. In addition, the beauty of Scotland and the warm, welcoming nature of the Scots people will not only make IEEE ICC-2007 memorable from a technical perspective but also from the rich, unforgettable experience of visiting Scotland and enjoying the country and its people. Catching up with old friends and meeting new ones is in itself a compelling reason for attending the event. Welcome to Glasgow.



John Thompson & Ivan Andonovic,
TPC Co-Chairs IEEE ICC2007



HM Treasury, 1 Horse Guards Road, London, SW1A 2HQ

It gives me great pleasure to welcome the delegates to the IEEE International Conference on Communications being held in Glasgow. I am delighted that international experts, representative all parts of the communications sector, have come to Glasgow to discuss the latest developments in communications technology and share their expertise.

More than ever, communications technologies are critical to the development of industry and commerce. They are also becoming essential to business, leisure and social interaction. The UK Government is committed to creating the best possible environment for high-tech, innovative sectors such as communications technologies to flourish. The UK currently ranks second only to the US in global scientific excellence, and we are investing further in our science base to support world-class research and effective knowledge transfer between researchers and business.

It is vital to the UK's continued economic success and scientific strength that we invest in our skills base and enthuse young people. I am therefore very please that school children from all over Scotland will also be taking part in the conference and I hope that the conference inspire them to become the next generation of scientists, engineers and technologists.

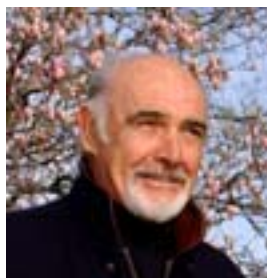
My best wishes for a very successful Conference and an enjoyable time in Scotland.

GORDON BROWN



Sir Sean Connery

A Very Warm Welcome to IEEE ICC-007 in Glasgow



I am delighted that the prestigious International Conference on Communications is being held in Glasgow in this very special year – '007. The IEEE is to be commended for its choice. The Theme of the Conference – Smart Communications Technologies for Tomorrow –SCOTT – is particularly apt and pertinent in the light of technological innovations and the rapid advances in communications media and systems.

Communications and information increasingly form the lifeblood of all industrial, commercial and social activity, and in this context ICC-007 offers an excellent opportunity to discuss the latest developments and to share experiences that will benefit all delegates. With the major growth in the communications industry and infrastructure in Scotland, and indeed worldwide, the Conference is an opportune occasion to review progress and to chart future directions.

I am pleased to learn that the Technical Programme includes over 1000 papers from some 60 countries, reflecting the truly international nature of the event, and the worldwide interest in the subject. I am delighted that some of the world's leading industrialists will be attending the Conference and presenting their vision of the future at the CEO Forum.

Glasgow's international links and long history of international trade and connections, coupled with its cosmopolitan ambience, make it a most appropriate venue for such an event. With its vast array of hotels and restaurants it offers a thoroughly enjoyable experience to visitors, and as the gateway to the Highlands, it presents immense opportunities to visit other parts of Scotland.

I hope that in addition to the technical interactions, delegates will take the time to have a holiday and enjoy the hustle and bustle of Glasgow, and take in the beautiful scenery, the serene beauty and the panoramic landscape of the Scottish countryside.

With all best wishes for a memorable Conference and an enjoyable stay in Scotland.



Organising Committee

ICC2007 Organising Committee

Arun Sarin *Vodafone Group – General Chair*
Tariq S. Durrani *University of Strathclyde – Executive Chair*
Ivan Andonovic *University of Strathclyde – Technical Co-chair*
John Thompson *University of Edinburgh – Technical Co-chair*
Ray Dent *Nelson Gilmour Smith & Co – Finance*
David Creed *ITI Techmedia – Industrial Liaison*
Iain Thayne *University of Glasgow – Application Sessions*
Evan Magill *University of Stirling – Tutorials*
James Irvine *University of Strathclyde – Publications*
David Harle *University of Strathclyde – Registration*
Bill Templeman *Scottish Enterprise – Exhibits*
Alisdair Gunn *Wireless Innovation– Developer's Forum*
Sheila Forbes *University of Strathclyde – Local Arrangements*

IEEE Communications Society 2006-07

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Patrons

The Organising Committee of ICC2007 and the IEEE Communications Society gratefully acknowledge the welcome support provided the following ICC2007 patrons.

SCOTTISH ENTERPRISE



Scottish Enterprise is the main economic development agency for Scotland covering 93% of the population from Grampian to the Borders. The Scottish Enterprise Network consists of Scottish Enterprise and 12 Local Enterprise Companies. Working in partnership with the private and public sectors the Network aims to build more and better businesses, to develop the skills and knowledge of Scottish people, and to encourage innovation to make Scottish business internationally competitive.

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web site: www.picSel.com

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Scottish Development International works to attract inward investment and knowledge to Scotland in order to help the economy grow. SDI also works to help Scottish companies do more business overseas and to promote Scotland as a good place to live, work and do business. It is jointly operated by the Scottish Executive and Scottish Enterprise. Its work is guided by the global connections theme of the Scottish Executive's Smart Successful Scotland strategy for economic development in Scotland.

web site: www.sdi.co.uk

web site: www.scotland.org

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Alcatel-Lucent provides solutions that enable service providers, enterprises and governments worldwide, to deliver voice, data and video communication services to end-users. As a leader in fixed, mobile and converged broadband networking, IP technologies, applications, and services, Alcatel-Lucent offers the end-to-end solutions that enable compelling communications services for people at home, at work and on the move. With operations in more than 130 countries, Alcatel-Lucent is a local partner with global reach. The company has the most experienced global services team in the industry, and one of the largest research, technology and innovation organizations in the telecommunications industry.

web site: www.alcatel-lucent.com/
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The mission of the Office of Naval Research (ONR) is to: foster, plan, facilitate and transition scientific research in recognition of its paramount importance to enable future naval power and the preservation of national security. It coordinates, executes, and promotes the science and technology programs of the United States Navy and Marine Corps through schools, universities, government laboratories, and nonprofit and for-profit organizations. It provides technical advice to the Chief of Naval Operations and the Secretary of the Navy and works with industry to improve technology manufacturing processes.

web site: <http://ww2.onr.navy.mil/>
Bronze Patron

VODAFONE

Vodafone is the world's leading international mobile communications group with operations in 25 countries across five continents and over 200 million proportionate customers by the end of January 2007, of which 100 million are in Europe, as well as 38 partner networks. For further information, please visit our website.

web site: www.vodafone.com/
CEO Forum & General Chair

**NOKIA SIEMENS NETWORKS**

Nokia Siemens Networks is a leading global enabler of communications services. The company provides a complete, well-balanced product portfolio of mobile and fixed network infrastructure solutions and addresses the growing demand for services with 20,000 service professionals worldwide. The combined pro-forma net sales of €17.1 billion Euros in fiscal year 2006 make Nokia Siemens Networks one of the largest telecommunications infrastructure companies. Nokia Siemens Networks operates in some 150 countries and headquarters in Espoo, Finland. It combines Nokia's Networks Business Group and the carrier related business of Siemens Communications.

web site: www.nokiasiemensnetworks.com

Lanyards and Internet Cafe

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Monday 25th June 2007 Clyde Hall
Opening Ceremony, CEO Forum and
IEEE/ComSoc Awards Ceremony

The Opening Ceremony and CEO Forum will be held in the elegant Clyde Hall of the Scottish Exhibition & Conference Centre (SECC). The Conference will be opened by a Welcome Address to be given by John Swinney, Cabinet Secretary of the Scottish Executive, followed by an Opening Presentation by Arun Sarin, CEO of the Vodafone Group, who is the General Chair for ICC2007.

- 0900 Introduction
Tariq S Durrani
Executive Chair ICC-2007
- 0905 Welcome Address
John Swinney
Cabinet Secretary, Scottish Executive
- 0920 Opening Remarks
Arun Sarin
General Chair ICC-2007 & Chief Executive Vodafone Group
- 0940 CEOs Forum

'The future of Convergence in the Communications Industry'

Chair: Arun Sarin

Presentations by keynote leaders sharing their visions of the industry's future

- 0940 **Ben Verwaayen**
Chief Executive BT
- 1000 **Sanjiv Ahuja**
Chairman Orange
- 1020 Refreshment Break
- 1045 **Pat Russo**
CEO Alcatel Lucent
- 1105 **Nikesh Arora**
President of EMEA Operations Google
- 1125 **Steve Ballmer**
CEO Microsoft – (video presentation)
- 1130 Discussion
- 1200 IEEE ComSoc Awards Ceremony
- 1230 Close

Arun Sarin



Arun Sarin
Chief Executive
Vodafone Group Plc

Arun Sarin, aged 52, graduated from the Indian Institute of Technology with a BS in Engineering in 1975. In 1978 he gained a MS in Engineering and a MBA from the University of California, at Berkeley.

He started his career as a management consultant before moving, in 1984, to Pacific Telesis Group in San Francisco. Commencing in corporate development, he was instrumental in the company acquiring the first cellular licences in the US as well as winning the first cellular licence in Germany and a PCN licence in the UK. He was subsequently appointed CFO and Chief Strategy Officer at Pacific Bell, before moving on to become Vice President and General Manager, San Francisco Bay Area Telephone Company, a Pacific Bell division with 12,000 employees.

Following the demerger from Pacific Telesis of the mobile and paging businesses to form AirTouch Communications, Arun was appointed Senior Vice President Corporate Strategy and Development where he developed and implemented a growth strategy encompassing partnerships and acquisitions, which included the merger with the US West wireless business. On becoming President and CEO, AirTouch International, Arun was responsible for the acquisition of wireless licences in several overseas territories and establishing the management teams of these new ventures. He then became President and CEO of AirTouch Communications where he was responsible for managing the cellular and paging operations in 14 countries and was a key negotiator in the successful acquisition of AirTouch by Vodafone Group Plc. Within the combined business, Vodafone AirTouch Plc, he was CEO US/Asia Pacific region, managing the Group's operations in the US, Asia and Australasia. In addition, he headed the Global Technology division, responsible for the introduction of wireless internet services. In 2000, with the successful merger of Vodafone AirTouch's US businesses with those of Bell Atlantic and GTE to form Verizon Wireless, Arun, whilst maintaining a non-executive directorship of Vodafone AirTouch Plc, became CEO of Infospace.

In 2001 he joined Accel-KKR Telecom, a telecom investment and management business, where he evaluated numerous opportunities in the telecommunications industry around the world and oversaw the acquisition of Bell Canada's Yellow Pages business.

In April 2003 he became CEO designate of Vodafone Group Plc and assumed the post of Chief Executive Officer on July 30th 2003. In April 2005, Arun's appointment to the Court of Directors of the Bank of England was announced, which became effective on 1st June 2005 and is for a fixed three year term.



Ben Verwaayen



Ben Verwaayen
Chief Executive
BT

Ben Verwaayen joined BT on 14 January 2002 as Chief Executive.

Ben was born in February 1952. He is a Dutch national and graduated with a Master's degree in law and international politics from the State University of Utrecht, Holland. Before joining BT Group, since October 1997, Ben had been with Lucent Technologies Inc. His position on leaving was Vice Chairman of the Management Board. Before this, Ben was Executive Vice President and Chief Operating Officer, and before this, Executive Vice President, International. Prior to Lucent, Ben was with Koninklijke PTT Nederland or KPN as it is more commonly known. From 1988 to 1997, Ben was President and Managing Director of KPN's PTT Telecom. From 1996 to mid-1997, Ben was Chairman of the Unisource European venture with Telia, Swisscom and Telefonica, and Chairman of AT&T/Unisource. Between 1975 and 1988, Ben was with ITT Nederland BV. He had become General Manager after enjoying a series of positions in business development, HR and public relations. Ben became a Non-Executive Director of UPS in 2005.

In 2006 he chaired a CBI Task Force on Climate Change, leading a group of CEOs from some of the UK's biggest companies. The Task Force will agree a plan of action to reduce the carbon emissions of British business..

Sanjiv Ahuja



Sanjiv Ahuja
Chairman
Orange

Having been the CEO since March 2004, Sanjiv is now the Chairman of Orange SA. He was the Chief Operating Officer of Orange from April 2003 to March 2004. During his leadership, Orange customer base has grown from 43 million to over 100 million customers worldwide, with the footprint expanding to include Poland, Spain, Senegal and Mali. The Orange Brand has also been adapted by France Telecom for its broadband and TV offerings.

Sanjiv's previous industry experience includes the role of President of Telcordia Technologies (formerly Bellcore), the world's largest provider of operations support systems, network software and consulting and engineering services to the telecommunications industry. Prior to that, he spent fifteen years at IBM in various executive roles. His last responsibility included leading IBM's entry into the telecommunications software industry. Most recently, he was CEO of Comstellar technologies, the Californian based technology company. He is currently a non executive director of Cadbury Schweppes and William Sonoma Inc.

He has a degree in electrical engineering from Delhi University, India, and a masters degree in computer science from Columbia University in New York.

Pat Russo



Pat Russo
Chief Executive
Alcatel Bell Labs

Patricia Russo is Chief Executive Officer of Alcatel-Lucent. Prior to the merger of Alcatel and Lucent Technologies, Patricia Russo was Chairman and Chief Executive Officer of Lucent. As one of the founding executives of the company, she helped launch Lucent in 1996 and spent more than 20 years of her career managing some of Lucent's and AT&T's largest divisions and most critical corporate functions.

As Lucent's CEO since January 2002, Patricia Russo led the company through one of the most challenging periods in the telecom industry's history and helped return the company to profitability. Under her leadership, Lucent implemented a new operating model, developed a more customer- and marketing-driven culture, won new business in emerging markets, expanded the role and reach of Bell Labs, and successfully completed its merger with Alcatel to create the world's first truly global communications solutions provider.

In addition to serving on Alcatel-Lucent's board of directors, Patricia Russo sits on the board of the Schering-Plough Corporation, where she chairs the governance committee. Patricia Russo received her undergraduate degree from Georgetown and completed the Advanced Management Program at Harvard University in 1989. She has received an Honorary Doctorate of Engineering from Stevens Institute of Technology, as well as an Honorary Doctorate in Entrepreneurial Studies from Columbia College in South Carolina.

Before joining AT&T in 1981, Patricia Russo spent eight years in sales and marketing at IBM. Patricia also served as president and chief operating officer at Eastman Kodak Company before returning to Lucent as CEO.



Nikesh Arora



Nikesh Arora
President
(EMEA Operations) Google

Nikesh Arora is Google's Vice President of Europe, Middle East and Africa.

Nikesh is responsible for Google's business across 25 offices in EMEA and is managing, scaling and building a team of over 2000 people. He is developing and deploying Google's products and marketing strategies in these markets and is working with advertisers to help them target and engage with consumers on the internet.

Nikesh's role also involves working with media companies, telecom companies, publishers cable/broadcast companies to develop strategies to partner with on products and services on the web. He is the spokesperson for Google EMEA for all PR matters and frequently speaks at major events in the UK and internationally.

Nikesh joined Google in December 2004 from T-Mobile, where he was the CMO and member of the Management Board.

Steve Ballmer



Steve Ballmer
Chief Executive
Microsoft

Steven A. Ballmer is Chief Executive Officer of Microsoft Corporation, the world's leading manufacturer of software for personal and business computing. Ballmer joined Microsoft in 1980 and was the first business manager hired by Bill Gates. Since then, Ballmer's leadership and passion have become hallmarks of his tenure at the company.

During the past 20 years, Ballmer has headed several Microsoft divisions, including operations, operating systems development, and sales and support. In July 1998, he was promoted to President, a role that gave him day-to-day responsibility for running Microsoft. He was named CEO in January 2000, assuming full management responsibility for the company, which includes delivering on the company's mission of enabling people and businesses throughout the world to realize their full potential.

Together with Gates and the company's other business and technical leaders, Ballmer is focused on continuing Microsoft's innovation and leadership across the company's seven businesses. Microsoft's goal is to provide an integrated platform to enable a seamless experience across a wide range of computing and non-PC devices and services.

Variously described as ebullient, focused, funny, passionate, sincere, hard-charging and dynamic, Ballmer has infused Microsoft with his own brand of energetic leadership, vision and spirit over the years.

Ballmer was born in March 1956, and grew up near Detroit, where his father worked as a manager at Ford Motor Co. He graduated from Harvard University with a bachelor's degree in mathematics and economics. While in college, Ballmer managed the football team, worked on the Harvard Crimson newspaper as well as the university literary magazine, and lived down the hall from fellow sophomore Bill Gates. After college, he worked for two years at Procter & Gamble Co. as an assistant product manager and, before joining Microsoft, attended Stanford University Graduate School of Business.

ComSoc Awards Ceremony

Hosted by Prof. J. Roberto de Marca, Chair, Awards Committee, IEEE ComSoc and IEEE Vice-President Elect, Technical Activities.

IEEE FELLOW GRADE PRESENTATIONS

Presented by Dr. Nim K. Cheung, President, IEEE Communications Society

Kwang-Cheng Chen (Taiwan) **Abbas Jamalipour** (Australia) **Tom R. Rowbotham** (UK)

KICS JCN BEST PAPER AWARD

Presented by Nikesh Arora - VP (Europe, Middle East and Africa) Google

Byeong G. Lee and **S. Y. Park**, Seoul National University, Korea, for 'An Analysis on the State-Dependent Nature of DS/SSMA Unslotted Aloha', Journal for Communication Networks, Vol.8, No.2, June 2006.



2007 IEEE COMSOC LEONARD G. ABRAHAM PRIZE

Presented by Ben Verwaayen - CEO British Telecom

George Theodorakopoulos and **John S. Baras**, University of Maryland, USA, 'On Trust Models and Trust Evaluation Metrics for Ad Hoc Networks, IEEE J. Selected Areas in Communications', Vo. 24, No. 2, pp. 318-328, Feb. 2006

2007 IEEE COMSOC WILLIAM R. BENNETT PRIZE

Presented by Sajiv Ahuja - Chairman - Orange

David Applegate and **Edith Cohen**, AT&T Research, USA, 'Making Routing Robust to Changing Traffic Demands: Algorithms and Evaluation', IEEE/ACM Transaction on Networking, Vol.14, no.6, pgs: 1193 – 1206, December 2006.

2007 IEEE COMSOC Stephen O. RICE PRIZE

Presented by Pat Russo - CEO Alcatel-Lucent

Ying Yu Tai Ikanos Communications; **Lan Lan**, **Lingqi Zeng**, **Shu Lin** and **Khaled A. S. Abdel-Ghaffar**, University of California, Davis, USA, Algebraic construction of quasi-cyclic LDPC codes for the AWGN and erasure channels, IEEE Trans. on Communications, vol.54, no.10, pp. 1765-1774, October 2006

COMSOC CAREER AWARD: IEEE COMSOC DISTINGUISHED INDUSTRY LEADER AWARD

Presented by Dr. Nim Cheung, President, IEEE Communications Society

Arun Sarin (CEO Vodafone Group)

ICC 2007 Symposia Best Paper Prizes

The following papers have won best paper prizes in the individual technical symposia. The awards will be presented at a private function.

Communications Theory

M. Yuksel and E. Erkip; "Diversity-Multiplexing Tradeoff in Half-Duplex Relay Systems", Polytechnic University, USA.

Communications QoS, Reliability and Performance Modelling

G. Michailidis; "A Measurement Based Dynamic Policy for Switched Processing Systems", University of Michigan, USA.

Computer and Communication Network Security

X. Lin; H. Zhu; P.-H. Ho; S. Shen and Z. Cao; "ASRPAKE: An Anonymous Secure Routing Protocol with Authenticated Key Exchange for Wireless Ad Hoc Networks", University of Waterloo, Canada.

Multimedia Communications and Home Networks

G. Jourjon; E. Lochin and P. Senac; "Towards sender-based TFRC", National ICT Australia Ltd (NICTA), Australia.

Network Services and Operation

J. Gao and P. Steenkiste; "Efficient Support for Similarity Queries in DHT-based P2P systems", Carnegie Mellon University, USA.

Optical Networks and Systems

D. Agrawal; M. Baldi; M. Corrà; G. Fontana; G. Marchetto; V. T. Nguyen; Y. Ofek; D. Severina; H. Truong and O. Zadedyurina; "Scalable Switching Testbed not "Stopping" the Serial Bit Stream", University of Trento, Italy.

Signal Processing for Communications

D. Yu; K. Seong and J. Cioffi; "Multiuser Discrete Bit-loading for Digital Subscriber Lines", Stanford University, USA.

Signal Processing and Coding for Data Storage

R. Todd and J.R. Cruz; "Computing Maximum-Likelihood Bounds for Reed-Solomon Codes over Partial Response Channels", University of Oklahoma, USA.



Wireless Ad Hoc and Sensor Networks

P. Wang and W. Zhuang; "A Token-Based Scheduling Scheme for WLANs and Its Performance Analysis", University of Waterloo, Canada.

Wireless Communications Systems Symposium

D. Michalopoulos; A. Lioumpas and G. Karagiannidis; "Increasing Power Efficiency in Transmitter Diversity

Systems under Error Performance Constraints", Aristotle University of Thessaloniki, Greece.

General Symposium

E. Lo and K. Letaief; "Cooperative Concatenated Coding for Wireless Systems", Hong Kong University of Science and Technology, Hong Kong.

Workshops

W-01: CogNet 2007 Workshop 'Towards Cognition in Wireless Networks'

Sunday 24th June 2007 Castle i

Organisers:

Ignas Niemegeers (Delft University of Technology)

R. Venkatesha Prasad (Delft University of Technology)

Petri Mahonen (RWTH Aachen University)

This workshop will bring together a small set of papers discussing novel ideas that should not only analyze the issues in a Cognitive Radio Networking (CRN) but also incorporate a clear direction towards the implementation of the CRN systems. This workshop brings together researchers, practitioners and the early proponents of CR. This workshop will be planned so as to allow more interactions amongst the participants rather than a conference would allow. The workshop programme appears on page 58.

W-02: Workshop on GMPLS Performance Evaluation: Control Plane Resilience

Sunday 24th June 2007 Castle 2

Organisers:

Joe Sventek (Uni. of Glasgow)

Olufemi Komolafe (Uni. of Glasgow)

The goal of this workshop is to provide a forum in which researchers and developers from industry and academia can present results and exchange ideas regarding the performance of the GMPLS control plane, with an emphasis on control plane resilience. The workshop will consist of invited talks, technical paper presentations and panel discussions.

W-03: Traffic Engineering in Next Generation IP Networks

Thursday 28th June 2007 Castle 1

Organisers:

Roberto Sabella (Ericsson)

Andrzej Jajszczyk (AGH University of Science and Technology, Krakow)

Jim Roberts (France Telecom)

Next generation networks will be based on the IP paradigm and incorporate multiple network core and access technologies. In addition, the infrastructure should support a wide range of services with several levels of quality of service (QoS) and resilience. The main requirements for these multi-service networks are flexibility, efficient utilization of network resources, and the ability to react to changing traffic demand. This workshop will allow discussion on how to use Traffic Engineering to fulfil these requirements. The workshop programme includes invited talks and seven presentations selected through the open call.

W-04: Findings and Experiences from European Research Projects on Optical Networking

Thursday 28th June 2007 Staffa

Organisers:

Stefano Bregni (Polytechnic of Milan),

Fabio Neri (Polytechnic of Turin),

Mike O'Mahony (University of Essex),

Christina Politi (National Technical University of Athens)

This workshop is a unique opportunity to have an up-to-date overview of a dozen of European research programs, surveying the experiences of key European participants in optical networking. It will highlight the European technical perspectives while also providing a comparison with research activities in Asia and America. In addition, this workshop will offer an excellent chance to worldwide researchers for meeting up, focusing research efforts, sharing ideas and taking a glimpse on open issues, emerging solutions, new results, advanced technologies and other cutting-edge topics in the area of optical systems and networks.



Social Programme

OT-01 Glasgow City Tour



Sunday 24th 3.00 – 6.30pm

**Places still available
at £27 per person**

This short introduction to Glasgow will cover a panoramic tour of the City Centre, including the River Clyde, the historic Cathedral and Merchant City, the Georgian grandeur of Blythswood Square, Kelvingrove Art Gallery and the University Campus. You will be taken through the Clyde Tunnel to visit the Burrell Art Collection in Pollok Country Park with the chance to see the largest herd of Highland Cattle in Britain.



Welcome Reception



Sunday 24th 6.30 – 9.30pm
Glasgow Science Centre

A welcome reception and buffet dinner will be held in the Glasgow Science Centre. The Glasgow Science Centre is one of Scotland's must-see visitor attractions - presenting concepts of science and technology in unique and inspiring ways. The event is open to all delegates and is included in the registration fee. The Local Organising committee and IEEE/ComSoc thank Glasgow City for their support and patronage in setting up the Reception.

OT-04: Loch Ness and The Highlands



Monday 24th 3.00 – 6.30pm

**Places still available
at £60 per person**

This tour will take you along the banks of Loch Lomond and over bleak and desolate Rannoch Moor. The tour will continue to Fort William, in the Shadow of Ben Nevis (the highest mountain in the UK), then through the Great Glen to Fort Augustus at the southern tip of Loch Ness. You will then head along the shores of Loch Ness (keeping a watchful eye out for the Loch Ness Monster) until we reach Urquhart Castle. It is from this ancient ruin that the majority of the sightings of Nessie have been made. After time to explore the castle the tour will retrace the route back, enjoying some more of Scotland's spectacular scenery.



Conference Banquet



Wednesday 27th 7.30 – 10.30pm
Kelvingrove Art Gallery

The highlight of the conference, the Conference Banquet will take place in the Kelvingrove Museum. Kelvingrove first opened its doors to the public on 2 May 1901 and is world renowned for the quality of its international art collection which includes Impressionists and Italian and Dutch Renaissance paintings. Without question the Art Gallery houses one of Scotland's finest civic Art collections. The ever changing contemporary exhibitions compete for your attention with the dinosaurs, suits of armour, frightening weaponry and treasures from throughout the world.



Tutorials

Encompassing a wide range of relevant and current topics, ICC-2007 offers an innovative and informative programme of tutorial sessions designed to support and complement the state-of-art research presented in the Technical Symposia and General Conference.

Sunday 24th June 2007 9.00am – 5.00pm Orkney (Crowne Plaza)

T-01: "The 4 MIMO's and Cross-layer Operation Aided Intelligent Networking"

Prof. Lajos Hanzo (Univ of Southampton)

This research-oriented presentation is based on the Wiley/IEEE Press monographs and considers the joint benefits of both MIMO-aided adaptive physical and adaptive network-layer performance enhancement techniques, with special emphasis on the latter. More specifically, conventional systems would drop a call in progress, if the communications quality falls below the target quality of service and it cannot be improved by handing over to another physical channel. By contrast, the adaptive transceivers of the near future are expected to simply 'instantaneously drop the throughput, rather than dropping the call' by reconfiguring themselves in a more robust mode of operation. It is demonstrated that the proposed beam-forming and adaptive transmission techniques may double the expected teletraffic capacity of the system, whilst maintaining the same AVERAGE performance as their conventional fixed-mode counterparts. The further benefits of employing cutting-edge MIMO-aided transceivers will also be explored and quantified.

Sunday 24th June 2007 9.00am – 5.00pm Castle 3

T-02: "Next Generation Wireless Technologies: High Throughput WiFi, WiMAX, and UWB"

Prof. Raj Jain (Washington University in Saint Louis)

This course on the latest advances in wireless data networking is designed for Engineers and Managers involved in the design and deployment of wireless equipment. In addition to providing an overview of the technology, issues and standards, it also covers the technical aspects. After a brief introduction to WiFi (IEEE 802.11) technology, we discuss the technological developments that enable high-speed IEEE 802.11n LANs. We present and compare these different proposals. The second part of the course is on broadband wireless access using WiMAX. Technical developments that allow WiMAX to provide high-speed communication over a long distance are explained. The key features of various versions of IEEE 802.16 (802.16, 802.16a, 802.16d) are presented. The mobile broadband access 802.16e is also described. Again technology, industrial status, and products are discussed. Finally Ultra Wide-Band (UWB) technology for high-speed personal area networks is covered.

Sunday 24th June 2007 9.00am Rockall (Crowne Plaza Mezzanine)

T-03: "Creating and Protecting Intellectual Property Rights"

Dion Messer (Weil, Gotshal & Manges LLP)

In this age of growing intellectual property rights for hardware, software and business processes, it is imperative that developers understand what those rights are and the mechanisms used to protect them. Failing to adequately protect designs may leave its owners and developers with no recourse should a third party misappropriate the design or implementation. Obtaining and enforcing patents has never been more important to companies than it is today all over the world. Patent infringement suits cost millions to defend, and

courts can order permanent injunctions preventing a losing party from making, selling, and using an infringing device. An accusing party can also petition the International Trade Commission to instigate an investigation into allegedly infringing products that are imported into the US. If the Commission finds that such products infringe a patent, it will prohibit any future imports and order the destruction of existing products in the US. This tutorial explains how intellectual property rights can be protected through patents, copyrights, and trade secrets. It gives an overview of international law and how to perfect international rights in the United States. It compares and contrasts the procurement, cost, and scope of protection of all three. It also addresses protecting hardware and software from both the outside—theft by a third party—as well as from the inside—theft by transient employees, contractors, etc. Intellectual property rights are further complicated by the fact that three sets of ownership rules govern contractors, regular employees hired to develop the software, and other employees. This tutorial explains the differences in those rules for each type of protection and their implications to both organizations and individuals.

Sunday 24th June 2007 9.00am Malin (Crowne Plaza Mezzanine)

T-04: "Broadband Convergence Network and Associated Technologies"

Prof. Abbas Jamilpour (Univ of Sydney, Aus)

The advent of mobile multimedia applications with high bandwidth and quality of service requirements has initiated a new era in telecommunications technology. At the same time, transportation of multimedia traffic has been diverted the telecommunications R&D to the advancement of existing and emerging technologies including 3G cellular networks (UMTS and cdma2000) and their next generation 4G, IEEE 802.16e (known as mobile WiMax), and IEEE 802.20 (known as Mobile-Fi). All these activities merge within the original concept of the realization of broadband wireless IP in a wide area of coverage. Toward such goal, the convergence of mobile and fixed networks becomes an important issue as it will provide new business models for the communications systems and generate new applications. Broadband convergence Network (BcN), therefore, becomes a vital term toward the implementation of next generation mobile networks and the broadband wireless IP. In BcN, interconnection among heterogeneous networks both on horizontal and vertical structures, interaction among network-dependent elements of those networks, as well as security, billing, and quality of service policies (including scheduling and admission control) must be carefully designed. The seamless movement of a subscribed user from the home network to a visiting network using a unique multimode handheld device will therefore create new problems to be solved by the telecommunications researchers. In this tutorial, fundamental concepts and specifications of the above technologies will be reviewed. It will be discussed whether these technologies can fulfill the requirements of the mobile Internet service in achieving seamless mobility and QoS guarantee for a variety of multimedia applications including both real-time and non-real-time traffic. Providing backward compatibility with the



existing (and advanced) technologies and the use of already available telecommunications infrastructure will be considered as the main factors in feasibility and sustainability study of any new technology for being a real player in the future broadband wireless Internet.

This tutorial contains brief reviews of several key technologies related to the topic of broadband convergence network, with concluding discussion on their role in BcN. The tutorial will provide a detailed feasibility study of how these technologies can work together and the key factors toward the realization of BcN as part of next generation mobile networks.

Sunday 24th June 2007 1.30pm Rockall (Crowne Plaza Mezzanine)

T-06: "Introduction to Project Management for Telecommunications Projects"

Celia Desmond (World Class – Telecommunications)

Do you ever wonder what makes a project successful, or what else you can do to achieve better results on your projects? Numerous problems cause many projects either to fail, or to create considerable difficulty for the project team. There are techniques that can be implemented which have been shown to make projects more successful and to make life easier for the project manager and the team. This short seminar provides broad coverage of project management methods, supplemented by real project examples from the telecommunications environment. Each process area described in the Project Management Institute's "Guide to the Project Management Body of Knowledge" will be covered, including Project Integration, Scope Management, Cost Management, Time Management, Risk Management, Procurement Management, Quality Management, Communications Management, Human Resources. Techniques addressing each of these areas can be applied to engineering projects large or small, no matter how simple or complex.

This tutorial is of value to anyone who works on projects in telecommunications companies, or the telecom/ electronic communications areas of other companies. The course illustrates the concepts and techniques that project managers and their teams need to use in order to successfully complete their projects within budget and schedule with quality work and products. So any project team member can benefit. Thus the audience includes:

- People in telecommunications companies, in both line and staff functions, who manage either large or small projects. Project can be service or product oriented, or process projects.
- People in related industries such as internet providers or companies making products for telecommunications could find the information useful
- People in other fields can also benefit from the material by considering examples from their own field

This seminar illustrates the value of project management techniques, and gives the attendees an opportunity to apply some of the key techniques to electronic communications projects. The seminar is not focused on telecommunications technologies. Instead it focuses on bringing these technologies to fruition via successful projects. The seminar links the business aspects with the technical aspects of the technical works, and bridges the fields of IEEE Communications Society and IEEE Engineering Management Society.

Sunday 24th June 2007 1.30pm Malin (Crowne Plaza Mezzanine)

T-07: "Availability-Based Service Provisioning in Backbone Networks"

Dr Dominic Schupke (Nokia Siemens Networks)

Optical networks are critical infrastructures, serving a large number of users and being subject to various outages (caused by failures, attacks, ...) Users depend on continuous service

operation, for which protection and restoration mechanisms are installed in the network. Thereby a desired availability level can be achieved for the user. Availability levels are defined in service level agreements (SLAs) between the user and the network operator. In traditional approaches, paths in the network are provisioned without inclusion of the service availability, potentially missing target availabilities. Novel approaches take service availability directly into account, and, thus, the path design can guarantee that target availabilities are met. The aim is to achieve design optimality subject to availability constraints, which are, however, often challenging because of their non-linear nature. Several solutions for availability-based service provisioning have been recently proposed. After establishing a terminology and model framework, the tutorial summarizes these approaches and identifies further research issues within the field. Many of the methodologies do not only apply to optical networks, but are also usable for other network technologies. The tutorial is rather an "in-depth" treatment of the topic.

Thursday 28th June 2007 9am – 5pm Jura (Crowne Plaza Mezzanine)

T-08: "Peer-to-Peer Technologies for Next Generation Communication Systems – Basic Principles and Advanced Issues"

Wolfgang Kellerer (DoCoMo Comms Labs (EU)) Prof. Jörg Eberspächer, Gerald Kunzmann, Stefan Zöls (Munich Uni. of Tech.)

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 to find and use distributed resources. P2P technologies have thus received an increased interest in academia and also in industry in different application areas not limited to file sharing but also in communication application 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 clever way to save infrastructure cost. This tutorial explains P2P principles and their advanced issues in two parts. Part 1 of the tutorial is addressing the basic principles of Peer-to-Peer (P2P) communications. We explain the concepts and algorithms of structured (DHT based) and unstructured P2P systems, which are the two main concepts used for resource lookup. Both concepts will be explained and illustrated with examples about analysis, traffic evaluations and applications. We will also elaborate on basic algorithms for P2P data delivery once a resource is found (example: BitTorrent). Part 2 of the tutorial is addressing advanced issues of P2P communications along selected topic areas. We will describe the application of P2P for Voice over IP systems, P2P security, P2P for mobile communications and P2P principles applied to mobile ad hoc networks.

Thursday 28th June 2007 9.00am Barra (Crowne Plaza Mezzanine)

T-09: "Reconfigurable Technology for MIMO-OFDM Systems with a focus on 802.16/802.16e"

Dr Raghu M Rao, Dr Chris Dick (Xilinx Inc)

High data rate applications are driving the need for high throughput and spectrally efficient broadband communication systems. Efficient modulation schemes and multiple antenna techniques are being explored for such applications. MIMO-OFDM is one such promising technology. OFDM modulation



has been adopted by almost all the major broadband wireless standards such as, 802.11a/g, DVB-T/DVB-H, 802.16, UWB, etc. MIMO-OFDM is also finding its way into some of the newer standards such as 802.11n and 802.16e. The key aspects of all of these standards are reliability and high-throughput. Mobility is also a key factor in some of these standards. In this tutorial we will start off by discussing the wireless propagation environment and study the characteristics of the wireless environment in the presence of scattering and mobility. We will introduce the audience to the key concepts of OFDM and MIMO-OFDM systems, relating aspects of information theory that led to the development of MIMO-OFDM systems. We will then consider the practical issues related to OFDM system and receiver algorithms, including feedback MIMO systems, the impact of RF and analog impairments on OFDM and MIMO-OFDM systems. The 802.16/802.16e physical layer will be discussed and will be used to exemplify the various aspects of OFDM and MIMO-OFDM technology. In addition we will discuss architectural aspects of FPGAs that make them a popular choice for developing wireless communication systems at the basestation, given their configurability and time to market advantages. Newer generation FPGAs also have dedicated fabric for efficient implementation of DSP and communication systems. Newer, higher level design methodologies, further improve this time to market advantage of FPGAs. We will briefly discuss these methodologies and also introduce some of the DSP and communication centric features of popular FPGAs.

The participants will learn about basic concepts of wireless propagation environment, will get a thorough understanding of OFDM and MIMO-OFDM systems and Mobile WiMax. They will also get a thorough understanding of FPGAs, design methodologies and communication and signal processing architectures for FPGAs.

Thursday 28th June 2007 9.00am Shuna (Crowne Plaza Mezzanine)

T-10: "Distributed Signal Processing for Wireless Sensor Networks"

Prof Georgios Giannakis (Uni. of Minnesota USA)

Recent technological advances have led to the emergence of small, low-power sensors with limited on-board processing and wireless communication capabilities. When deployed in large numbers, these devices have the ability to form an intelligent network which can measure aspects and identities of the physical environment in unprecedented scale and precision. Such sensor networks can be employed in situation awareness applications such as environmental monitoring (air, water, and soil), smart factory instrumentation, military surveillance, precision agriculture, intelligent transportation and space exploration, to name a few. To fully exploit the potential of sensor networks, it is essential to take advantage of power and bandwidth efficient communications and signal processing algorithms which can be implemented in a distributed manner. Responding to the growing interest on wireless sensor networks, this tutorial will provide a comprehensive overview of the state-of-the-art with emphasis on the unique features and challenging research directions.

Thursday 28th June 2007 9.00am Malin (Crowne Plaza Mezzanine)

T-11: "Next Generation Multimedia Transmission and Storage Technologies"

Prof Bahram Honary, Dr Vladimir Stankovic, Dr Lina Fagoonee (Uni. of Lancaster)

The tutorial addresses high-speed, high-capacity networks and storage for tomorrow's ever-growing multimedia content distribution. It aims at highlighting the latest advances in

digital multimedia communications and storage technologies and the newest standardization issues for digital video broadcasting (DVB). It also offers an insight into next generation smart multimedia technologies, such as distributed multimedia processing and transmission.

The tutorial will comprise three key themes linked by the need to achieve reliable high-speed multimedia transmission and storage. 1. Migration to capacity-approaching codes for Digital Video Broadcasting (DVB) a. Overview of DVB-T, DVB-M, DVB-S, DVB-S2 b. Capacity-approaching channel coding and hierarchical modulation c. Standardization issues (e.g., backwards compatibility, long-term migration) 2. Emerging multimedia communications technologies based on distributed source coding (DSC) a. Practical DSC code design with capacity-approaching channel codes b. Wyner-Ziv video coding c. DVB based on DSC principles 3. 4th generation optical storage with up to 100GB capacity a. Signal processing techniques for increasing data rate and capacity b. Multilevel two-dimensional optical storage c. Symbol detection and error protection The tutorial is designed for graduate students, engineers, and researchers in academia/industry working in the fields of multimedia communications, communication theory, multimedia signal processing, and storage.

Driven by a host of numerous multimedia applications (such as video-on-demand, interactive digital TV, 3G mobile communications, large data-bases, archiving and back-ups), today's society is facing an increasing demand for higher transmission capacity and storage density. This tutorial will study the current trends and emerging technologies that facilitate ubiquitous availability and instantaneous access to large amounts of multimedia data.

Thursday 28th June 2007 9am – 5pm Rockall (Crowne Plaza Mezzanine)

T-12: "An Intuitive Approach to Error-Correction Coding: How we (Virtually) Reached the Shannon Limit"

Dr Bernard Sklar (Communications Engineering Services)

Block codes, convolutional codes, and trellis-coded modulation represent the core techniques for obtaining coding gain. We review these fundamentals by briefly addressing: how to generate codes, how to decode them, the advantage of non-binary codes (such as Reed-Solomon) in bursty noise, the benefits of soft-decisions, and how they are implemented with Viterbi decoding of convolutional codes. Owing to recent developments, soft-decision decoding has now become very important for block codes - which leads to the main thrust of this tutorial - examining the remarkable coding strides accomplished in this decade. These advances, which are bringing digital system performance extremely close to the theoretical limitation of what is possible, entail the use of iterative decoding techniques which we examine by using turbo-code and low-density parity-check (LDPC) code examples. We focus on the remarkable performance of LDPC, and demonstrate the workings of the message-passing algorithm used with such iterative decoding methods. In general, we strive to present the key developments of the past nearly-60 years in a way that is easy-to understand and very intuitive.

Thursday 28th June 2007 1.30pm Malin (Crowne Plaza Mezzanine)

T-14: "Routing, TE and Resilience in Heterogeneous Optical Networks"

A/Prof. Tibor Cinkler, (Budapest Uni. of Tech. & Econ.)

Heterogeneous networks based on optical transmission and eventually optical switching are a hot topic as well as the



efficient resource management methods. The networks are moving from simple provisioned to on-demand switched capabilities. Although the standardization gives a framework for how to do routing, TE and Protection/Restoration in networks, this framework does not give methods (models and algorithms) for their implementation in a heterogeneous environment.

Participants will understand the hottest trends in optical-based heterogeneous networks as well as some interesting properties of resource control and management. A SWOT-like (SWOT: Strength Weakness Opportunity Threat) analysis of some approaches and strategies will be given illustrated by simulation results.

The growth of the traffic in networks induced, among others, by new applications and the advance of optical technology have made clear that the networking of the forthcoming decades will definitively relay on optics. Not only the transmission links but also the network nodes as well as the metro and access parts are expected to become optical. This tutorial gives first an overview of optical networks in general, then it focuses onto the transport (backbone) part with starting with a short overview of networking techniques ranging from SONET and SDH through ATM/MPLS, ngSDH/SONET, OTN/DigitalWrapper, 10GbE, MPLambdaS/ASON and GMPLS/ASTN to OBS/OPS. The trends will be presented as well as the advantages and drawbacks of certain networking solutions, with special emphasis on common aspects and solutions reused by different techniques. The tutorial will give an overview of heterogeneous (Multi-Service, Multi-Layer, Multi-Domain, Multi-Provider, Multi-Vendor) networks with emphasis on vertical and horizontal interconnection and integration including the aspects of User (Data), Management and Control Planes. Then we will discuss and illustrate the problems of Routing, Traffic Engineering and Resilience in such heterogeneous networks as follows: Problems introduced by the networking evolution and the solution alternatives to these problems will be presented trying to answer among others the following questions: • What is better: static, dynamic or adaptive routing? • Should it be centralised, or distributed? • Should network domains be used to make the routing scalable? How? • What information aggregation strategies and what flooding mechanisms are needed for Multi-Domain Routing? • How to make this high capacity network more resistant to failures (Protection, restoration, fast reroute (FRR), Multi-Path Protection (MPP), p-cycle)? • How can the performance be improved through traffic engineering (TE)? • How can multilayer architectures be handled (overlay, peer and augmented interconnection models or the integrated MRN one)? • How do the layers impact granularity (e.g., sub-lambda granularity)? • How do Traffic, Wavelength (Lambda) and Waveband grooming improve throughput? • What about QoS and transparency? • What is the role of the User (Data), Control and Management Planes and through what interfaces and how do they cooperate? • What are the most promising services over these networks, e.g., (o)VPN (Virtual Private Network), (o)VON (Virtual Overlay Network), Leased Bandwidth, Leased Lambda, Bandwidth on Demand, Lambda on Demand? • What if we have multiple services, multiple layers and multiple domains within a network?

Thursday 28th June 2007 1.30pm Shuna (Crowne Plaza Mezzanine)

T-15: "Distributed Cooperative Communication Networks - with application to cellular, ad hoc and sensor networks"

Dr Mischa Dohler (France Telecom), Prof Hamid Aghvami (King's College)

This tutorial will be different from previous tutorials given by the same presenters. It will be an in-depth technical treatment of latest results having emerged in 2006 and 2007 on cooperative wireless systems. The focus will be on latest results in:

- realizable hardware and associated costs;
- distributed SISO and MIMO channel modeling;
- cooperative PHY (AF, LF, nLF, EF, CF, DF, PF and GF);
- cooperative MAC & Cross-Layer Design.

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. We will discuss the applicability of above techniques to cellular, ad hoc and wireless sensor networks. Based on our unique industrial experiences, we will clearly pin-point the limits of cooperative wireless systems when used in wireless sensor and cellular networks. The participants will be equipped with a sufficient set of tools related to the analysis and optimization of such systems. They will be able to apply developed theories and tools to emerging problems in his/her own field of research. The attendee is expected to be well equipped in the functioning and understanding of modern communication systems. Knowledge in information theory, channel modeling, space-time code design and medium access control is advantageous but not vital. Since the topic of cooperative wireless systems is very new, the tutorial is intended to be self-consistent.

Thursday 28th June 2007 1.30pm Barra (Crowne Plaza Mezzanine)

T-16: "Traffic Engineering and Quality of Service Management for IP-based Next Generation Networks"

Prof George Pavlou (Univ. of Surrey)

Next Generation IP-based Networks will offer Quality of Service (QoS) guarantees by deploying technologies such as Differentiated Services (DiffServ) and Multi-Protocol Label Switching (MPLS) for traffic engineering and network-wide resource management. Despite the progress already made, a number of issues still exist regarding edge-to-edge intra-domain and inter-domain QoS provisioning and management. This tutorial will start by providing background on technologies such as DiffServ, MPLS and their potential combination for QoS support. It will subsequently introduce trends in Service Level Agreements (SLAs) and Service Level Specifications (SLSs) for the subscription to QoS-based services. It will then move to examine architectures and frameworks for the management and control of QoS-enabled networks, including the following aspects: approaches and algorithms for off-line traffic engineering and provisioning through explicit MPLS paths or through hop-by-hop IP routing; approaches for dynamic resource management to deal with traffic fluctuations outside the predicted envelope; a service management framework supporting a "resource provisioning cycle"; the derivation of expected traffic demand from subscribed SLSs and approaches for SLS invocation admission control; a monitoring architecture for scalable information collection supporting traffic engineering and service management; and realization issues given the current state-of-the-art of management protocols and monitoring support. The tutorial will also include coverage of emerging work towards inter-domain QoS provisioning and relevant industrial activities such as IPsphere. In all these areas, recent research work will be presented, with pointers to bibliography and a specially tailored Web page with additional resources.



Application Sessions

The Applications Sessions are the opportunity for ICC 2007 delegates to hear from, and engage with, domain experts from around the world on exciting areas of communications of general interest to all conference attendees. Each of the 9 scheduled 90 minute application sessions will provide a stimulating forum for discussion and debate, and are free to all ICC-2007 delegates.

AP-01: Complementary Access Strategies?

Monday 25th 14.00-15.30
Lomond

Chair:

Klaus-D. Korht (Nokia Siemens Networks)

Panelists:

Ed Candy (Hutchison 3G)

Franck Chevalier (Mason Communications),

Christian Illmer (Intel),

Gennady Sirota (Starent Networks)

For some time now, a public debate has been raging about the relevance and relationship of different radio access technologies for public wireless service, i.e. multiple generations of cellular standards versus products originating from the IEEE 802 family of wireless specifications. This session will help to eliminate the myth that any one radio candidate can make all other technologies obsolete. Instead we will show that the right combination of radio access capabilities will provide the network operator with the most cost effective solution in order to satisfy customer requirements. In addition to reporting on the latest trends in standardization, the panel will elaborate on how these technologies can interoperate while making the nature of the underlying bitpipe invisible to the end user.

AP-02: 20/20 Vision - The Future of Communications

Monday 25th 16.00-17.30
Lomond

Chair:

Walter Tuttlebee (Mobile VCE)

Nigel Jeffries (Vodafone)

Panelists:

Wolfgang Kellerer (DoCoMo Communications Labs, Europe)

Yrjo Neuvo (Nokia)

Bob Schukai (Turner Broadcasting Inc)

Rahim Tafazolli (Surrey University)

Richard Harper (Microsoft Research)

The world of communications is undergoing a paradigm shift, with convergence of fixed, mobile and content. There are new challenges and market opportunities, both geographically and in terms of advanced, yet low-cost, services. The next decade will see the emergence of networks, services, devices that go well beyond today's concepts – whether we call them B3G, 4G or something else. What shape will this future take? Asia, America and Europe are not agreed – neither are different industries. This conference session is structured to explore views on possible developments over the next decade. Invited experts will give short, sharp, focussed presentations on specific topics, followed by a structured Q&A session, harnessing questions developed by the audience. The latest interactive mobile tools will enable participants to feed back their own views on the panel's responses in realtime as the session proceeds, creating a dynamic interaction that perhaps mirrors the way that the future evolution may itself occur.

AP-03: Towards Cooperative and Cognitive Wireless Networks

Tuesday 26th 09.00-10.40
Lomond

Chair:

Marcos Katz (VTT, Finland)

Frank Fitzek (University of Aalborg)

Panelists:

Matthias Lott (Siemens)

Allen MacKenzie (Virginia Tech)

Petri Mahonen (Aachen University)

Honggang Zhang (Create-Net)

The aim of the panel is to discuss cooperative and cognitive techniques for wireless networks. Cooperative and cognitive principles are known as effective strategies in nature to achieve individual or common goals by forming cooperative groups. By having industry and academia representatives the panel will underline the potential of cooperative and cognitive techniques in future wireless networks, identifying and discussing the opportunities and challenges associated with these techniques. The strength of cooperative and cognitive strategies for upcoming generation of wireless communication systems will be discussed and it will be emphasized that such techniques will become one of the key technologies enabling future wireless networks. Advanced and well timed subjects such as cognitive and cooperative wireless networks, peer-to-peer wireless grids and cognitive radio will be discussed in the panel. The panel will be complemented with live demonstrations highlighting the techniques.

AP-04: The Future of Broadcasting- What is it?

Tuesday 26th 11.00-12.30
Lomond

Chair:

Peter Dare (Broadcast Consultant)

Panelists:

Barry Zegel (CBS),

Hans Hoffmann (EBU),

Khaled Taha (Al Jazeera)

Masayuki Sugawara (NHK)

Huw Williams (BBC)

This application session will deal with the technology changes being faced by the broadcast and related industry, such as the transition to digital transmission, High Definition Television (HDTV) and Internet Protocol TV (IPTV). Compression technologies, MPEG-2 and MPEG-4 (H.264) have addressed the bandwidth requirements of the broadcaster, they have however also exaggerated the lack of audio and video synchronization, and introduce latency that visibly impacts response time of reporters in the field during live telecasts. Another issue is the use of the frequency spectrum, some administrations would prefer to see the spectrum currently utilized by terrestrial broadcasters auctioned to the highest bidder. So what will become of the free to air services, are they in fact required? The commercial or financial model utilized by the broadcasters is changing dramatically. The now ubiquitous internet is providing another pipeline, while mobile TV has the potential for offering yet more services.



AP-05: Personal Area Networks

Tuesday 26th 14.00-15.30
Lomond

Chair:

Duncan Bremner (ITI TechMedia)

Panelists:

Finn Helmer

Steve Wood (Intel)

Nick Hall (NDS)

Mark Norris (Cambridge Consultants -
Wireless Group)

Personal Area Network (PAN) connectivity has moved beyond simple headset pairing and extended to users demanding permanent connectivity to their stored resources for work, leisure and information. The sophisticated user now expects to access his/her information and entertainment libraries via a plethora of devices simply and seamlessly; confident that access privileges, file security and rights management are all being handled appropriately behind the scenes.

The members of this panel will discuss the software and hardware use cases and challenges of implementing PANs from distinctly different viewpoints:

- Residential high speed network connectivity
- Entertainment media rights, storage and access
- Short range wireless network technologies
- The role of the PC in the home of the future

The focus of this panel session is to discuss the barriers to on-line connectivity and how technology can interoperate to address these issues.

AP-06: Industry Academia Collaborations

Tuesday 26th 16.00-17.30
Lomond

Chair:

Mahmoud Daneshmand (AT&T Labs)

Panelists:

David Belanger (AT&T Labs)

Andrew Chien (Intel Research / UCSD)

Hamid Aghvami (King's College
London)

John Wacławsky (Motorola)

Nikil Jayant (Georgia Tech)

The objective of this panel is to present the current practices in Industry-Academic Research Collaborations and to discuss new approaches in promoting joint research collaborations leading to faster industrial innovations and enhanced academic education. Researchers from academia and industry will share their current experience and suggest future directions to ensure maximum benefit for both academia and industry. The challenges related to the administrative issues of collaboration including the legal process & procedures as well as protection of the Intellectual Property Rights of academia and industry will be discussed. Practical steps to simplify and facilitate the industry-academia collaborations will be covered. Target fields of discussion include computer (hardware and software), telecommunications, mathematics, statistics, and electrical engineering.

AP-07: Miniaturised, Mobile Distributed Wireless Sensor Networks

Tuesday 26th 09.00-10.30
Lomond

Chair:

Iain Thayne (University of Glasgow)

Panelists:

D K Arvind (Univ of Edinburgh)

Roger Meike (SUN Research Labs)

Walter Stockwell (Crossbow Inc)

As 1st generation distributed wireless sensor networks are now being deployed in a wide range of applications areas, attention is turning to the issues to be addressed by future generation solutions – for example, inter-node mobility. Via interactive methods with the audience, key challenges for future wireless sensor network systems will be identified and addressed by panelists with reference to all levels in the system from the battery through sensor integration, communications methods via the physical layer to the necessary protocols, networks and routing algorithms

AP-08: Funding Communications R&D – Who Pays?

Wednesday 27th 11.00-12.30
Lomond

Chair:

Rabi N. Madan (ONR)

Panelists:

Debbie Crawford (NSF)

John Hand (EPSRC)

Michael Arentoft (EU)

This panel will review the various mechanisms to support R&D activities in the broad area of communications in the US, Europe and Asia. Key issues to be explored include the identification of the best ways to fund and subsequently manage R&D from both the governmental agency and industrial perspectives with reference to choice of project, team, virtual or real centres, the outcome expectations, and the subsequent exploitation of successful research and development programs.

AP-09: Standards, Spectrum and Regulation

Wednesday 27th 14.00-15.30
Lomond

Panelists:

Walter Wiegel (ETSI)

Anirban Roy (OFCOM)

Javier Arregui (EU)

Pete Cain (Agilent)

This session will discuss contemporary issues in standards, spectrum and regulation from the perspective of both the regulators and industrial users. Comments, and questions from the floor will be welcomed, and will be dealt with by leading regulatory experts from Europe.



Technical Programme

Communications QoS, Reliability and Performance Modelling Symposium

Monday, 25 June 2007 2:00 - 3:40pm Dochart 1

CQR01: QoS in Satellite and Broadcasting Networks

- 1 A Dynamic Service Level Negotiation Mechanism for QoS Provisioning in NGE0 Satellite Networks**
Tarik Taleb, Kazuo Hashimoto, Nei Kato, Yoshiaki Nemoto, Tohoku University, Japan
- 2 Performance Study of Bandwidth Allocation Techniques for QoS-constrained Satellite Networks**
Igor Bisio, Mario Marchese, University of Genoa, Italy
- 3 Performance of VoIP using DCCP over a DVB-RCS Satellite Network**
Arjuna Sathiaselalan, Gorry Fairhurst, University of Aberdeen, UK
- 4 Buffer Occupancy-based CAC in Converged IP and Broadcasting Networks**
Yassine Hadjadj Aoul, Abdelhamid Nafaa, Ahmed Mehaoua, University of Versailles, France
- 5 On-Demand Routing in LEO Satellite Systems**
Stylianios Karapantazis, Aristotle University of Thessaloniki, Greece; Evangelos Papapetrou, University of Ioannina, Greece; Fotini-Niovi Pavlidou, Aristotle University of Thessaloniki, Greece
- 6 M-gated Scheduling in Wireless Networks: Performance and Cross-layer Design**
Yan Li, Guangxi Zhu, Huazhong University of Science and Technology, PRC

Monday, 25 June 2007 2:00 - 3:40pm Dochart 2

CQR02: Performance Analysis and Evaluation

- 1 Performance Analysis of Adaptively-routed Wormhole-switched Networks with Finite Buffers**
N. Alzeidi, M. Ould-Khaoua, L. M. Mackenzie, University of Glasgow, UK; A. Khonsari, University of Tehran, Iran
- 2 Achieving High Goodput Performance in Mars Missions through Application Layer Coding and Transmission Power Trading**
Tomaso de Cola, Genoa University; Harald Ernst, German Aerospace Center, Germany; Mario Marchese, Genoa University, Italy
- 3 CLAPS: A Cross-layer Analysis Platform for P2P Video Streaming**
M. Barbera, A. G. Busà, A. Lombardo, G. Schembra, University of Catania, Italy
- 4 Performance Evaluation of Network Systems Accounting for User Behaviors**
Shigeru Kaneda, Akihito Hiromori, Yoshikazu Akinaga, Noriteru Shinagawa, Kazuo Sugiyama, NTT DoCoMo, Inc., Japan; Mineo Takai, University of California at Los Angeles, USA
- 5 Predicting User-Perceived Quality Ratings from Streaming Media Data**
Amy Csizmar Dalal, David R. Musicant, Jamie Olson, Brandy McMenamy, Sami Benzaid, Ben Kazez, Erica Bolan, Carleton College, USA
- 6 Application-aware Topology Formation Algorithm for Peer-to-Peer Networks**
Kin-Wah Kwong, University of Pennsylvania, USA; Danny H. K. Tsang, The Hong Kong University of Science & Technology, PRC

Monday, 25 June 2007 4:00 - 5:40pm Dochart 1

CQR03: QoS in Wireless Mesh, Ad Hoc and Cellular Networks

- 1 Optimal Bandwidth Provision at WiMAX MAC Service Access Point on Uplink Direction**
Mario Marchese, Maurizio Mongelli, University of Genoa, Italy

2 QoS Constrained VoIP Scheduling in 1xEV-DO

Bo Wei, Huawei Technologies, USA; Adrian Boariu, Nokia, USA

3 On Connectivity and Capacity of Wireless Mesh Networks

Ernesto Miorando, Fabrizio Granelli, University of Trento, Italy

4 Distributed Power Control in Multihop Ad Hoc CDMA Networks

G. Kesidis, A. Neishaboori, Pennsylvania State University, USA

5 Characterizing and Exploiting Partial Interference in Wireless Mesh Networks

Ka-Hung Hui, Wing-Cheong Lau, On-Ching Yue, The Chinese University of Hong Kong, PRC

6 Scheduling and Source Control with Average Queue-length Control in Cellular Networks

Hyang-Won Lee, KAIST, Korea; Cheoljung Kim, Electronics and Telecommunications Research Institute, Korea; Song Chong, KAIST, Korea

Monday, 25 June 2007 4:00 - 5:40pm Dochart 2

CQR04: Network Routing

1 Fast Proactive Recovery from Concurrent Failures

Audun Fossellie Hansen, Simula Research Laboratory, Norway; Telenor R&I, Norway; Olav Lysne, Tarik Čičić, Stein Gjessing, Simula Research Laboratory, Norway

2 Fast Exact MultiConstraint Shortest Path Algorithms

Yuxi Li, Janelle Harms, Robert Holte, University of Alberta, Canada

3 Empirical Study on Inferring BGP Routing Instability and Its Location Based on Single Point Observation

Tomohiko Ogishi, Yuichiro Hei, Shigehiro Ano, Toru Hasegawa, KDDI R&D Laboratories, Inc., Japan

4 Inter-domain QoS Routing with Virtual Trunks

Rui Prior, University of Porto, Portugal; Susana Sargento, University of Aveiro, Portugal

5 Scalable Fault Diagnosis in IP Networks using Graphical Models: A Variational Inference Approach

Rajesh Narasimha, Souvik Dihidar, Chuanyi Ji, Steven W. McLaughlin, Georgia Institute of Technology, USA

6 Optimal Worst-Case QoS Routing in Constrained AWGN Channel Network

Edwin Soedarmadji, Robert J. McEliece, California Institute of Technology, USA

Monday, 25 June 2007 4:00 - 5:40pm SECC Hall 2

CQR05P: Communications QoS, Reliability and Performance Modelling Symposium

Poster Session

1 CAPEL: A Packet Discard Policy for Real-time Traffic over Wireless Networks

Ching-Wan Yuen, Wing-Cheong Lau, On-Ching Yue, The Chinese University of Hong Kong, PRC

2 Behavioral Characteristics of Spammers and Their Network Reachability Properties

Zhenhai Duan, Florida State University, USA; Kartik Gopalan, Binghamton University, USA; Xin Yuan, Florida State University, USA

3 A Practical and Efficient Implementation of WF2Q+

George N. Rouskas, Zyad Dwekat, North Carolina State University, USA

4 A Statistical Bit Error Generator for Emulation of Complex Forward Error Correction Schemes

Reuben A. Farrugia, Carl J. Debono, University of Malta, Malta



5 Call-level Performance Modelling of Elastic and Adaptive Service-classes

Vassilios G. Vassilakis, Ioannis D. Moscholios, Michael D. Logothetis, University of Patras, Greece

6 Outage Performance of Wireless Systems with LCMV Beamforming for Dominant Interferers Cancellation

Hanyu Li, Yu-Dong Yao, Stevens Institute of Technology, USA; Jin Yu, Berkeley Varitronics Systems, USA

7 HTTP Transfer Latency over SCTP and TCP in Slow Start Phase

Yong-Jin Lee, Korea National University of Education, Korea; M. Atiquzzaman, University of Oklahoma, USA

8 On the Impact of Ignoring Markovian Channel Memory on the Analysis of Wireless Systems

Syed Ali Khayam, National University of Sciences & Technology, Pakistan; Hayder Radha, Michigan State University, USA

9 New Results on Single-step Power Control System in Finite State Markov Channel: Power Control Error Modelling and Queueing Variation Modelling

Shi-Yong Lee, Min-Kuan Chang, National Chung-Hsing University, ROC

10 Managed Dynamic VPN Service: Core Capacity Sharing Schemes for Improved VPN Performance

Ravi S. Ravindran, Changcheng Huang, Carleton University, Canada; K. Thulasiraman, University of Oklahoma, USA

11 A Traffic Model for UDP Flows

Larissa O. Ostrowsky, Nelson L. S. da Fonseca, Cesar A. V. Melo, State University of Campinas, Brazil

12 Blocking Probability Estimation for Trunk Reservation Networks

Garvesh Raskutti, Andrew Zalesky, The University of Melbourne, Australia; Eric W. M. Wong, City University of Hong Kong, PRC; Moshe Zukerman, The University of Melbourne, Australia

13 Effect of Traffic Shifts on the Economics of Telecommunication Competition

Jayant Baliga, Andrew Zalesky, Moshe Zukerman, The University of Melbourne, Australia

14 Queueing with Adaptive Modulation over MIMO Wireless Links for Deadline Constrained Traffic: Cross-layer Analysis and Design

J. S. Harsini, F. Lahouti, University of Tehran, Iran

15 Performance Analysis of Polling-based TDMA MAC Protocols with Sleep and Wakeup Cycles

Haiming Yang, Biplab Sikdar, Rensselaer Polytechnic Institute, USA

16 A TCP Connection Establishment Filter: Symmetric Connection Detection

Brad Whitehead, Chung-Horn Lung, Carleton University, Canada; Peter Rabinovitch, Alcatel-Lucent, Canada

17 Opportunistic Cooperation for Quality of Service Provisionings over Wireless Relay Networks

Lin Xie, Xi Zhang, Texas A&M University, USA

18 Novel Link Weight for Path Construction Based on Overall QoS Index

Yudai Nitta, Taro Hashimoto, Katsuyoshi Iida, Katsunori Yamaoka, Yoshinori Sakai, Tokyo Institute of Technology, Japan

Tuesday, 26 June 2007 9:00 - 10:40am Dochart 1

CQR06: Network Congestion Control

1 Stabilizing RED using a Fuzzy Controller

Jinsheng Sun, Moshe Zukerman, Marimuthu Palaniswami, The University of Melbourne, Australia

2 QoS Aware Dynamic Flow Control in Virtual Private Network

Fariza Sabrina, Glynn Rogers, Commonwealth Scientific and Industrial Research Organisation, Australia

3 Fixed-period Packet Sampling and Its Application to Flow Rate Estimation

Sadayoshi Itou, Kousuke Uchiyama, Shigeo Shioda, Chiba University, Japan

4 Design of a Stabilizing Second-order Congestion Controller for Large-delay Networks

Jianxin Wang, Liang Rong, Guojun Wang, Central South University, PRC; Weijia Jia, City University of Hong Kong, PRC; Minyi Guo, Shanghai Jiao Tong University, PRC

5 Locating Congested Segments on the Internet by Clustering the Delay Performance of Multiple Paths

Atsuo Tachibana, Shigehiro Ano, Toru Hasegawa, KDDI R&D Laboratories, Japan; Masato Tsuru, Yuji Oie, Kyusyu Institute of Technology, Japan

6 A Measurement-based Dynamic Policy for Switched Processing Systems

Ying-Chao Hung, National Central University, ROC; George Michailidis, The University of Michigan, USA

Tuesday, 26 June 2007 11:00am - 12:40pm Dochart 1

CQR07: QoS Control in Mobile Networks

1 DiffServ Model with Backpressure for CDMA2000

Tamir Erlichman, Ioannis Lambadaris, Parsa Larijani, Carleton University, Canada

2 A More Realistic Approach to Information—Theoretic Sum Capacity of Reverse Link CDMA Systems in a Single Cell

Arash Abadpour, Attahiru Sule Alfa, University of Manitoba, Canada; Anthony C. K. Soong, Huawei Technological Co. Ltd., USA

3 An Application-driven Mobility Management Scheme for Hierarchical Mobile IPv6 Networks

Tarik Taleb, Yuji Ikeda, Kazuo Hashimoto, Yoshiaki Nemoto, Nei Kato, Tohoku University, Japan

4 A Semantic Context Model for Location-based Cooperative Mobile Computing

Bin Hu, Philip Moore, University of Central England, UK; Hsiai-Hwa Chen, National Sun Yat-Sen University, ROC

5 Modeling Channel Occupancy Times for Voice Traffic in Cellular Networks

Emre A. Yavuz, Victor C. M. Leung, The University of British Columbia, Canada

6 Use of Fuzzy Bayesian Clustering to Enhance Generalization Capacity of Radio Network Planning Tool

Zakaria Nouir, Berna Sayrac, Benoit Fourestié, Luca Sartori, France Télécom R&D, France

Tuesday, 26 June 2007 2:00pm - 3:40pm Dochart 1

CQR08: Network Control

1 Self-adjusting Grid Networks

Daniel M. Batista, Nelson L. S. da Fonseca, State University of Campinas, Brazil; Fabrizio Granelli, Dmitry Kliazovich, University of Trento, Italy

2 Reducing Network Traffic Data Sets

Alessio Botta, Alberto Dainotti, Antonio Pescapè, Giorgio Ventre, University of Napoli Federico II, Italy

3 Power Managed Packet Switching

Aditya Dua, Benjamin Yolken, Nicholas Bambos, Stanford University, USA

4 A Multi-scale Tomographic Algorithm for Detecting and Classifying Traffic Anomalies

Sílvia Farraposo, IPL, Portugal; Philippe Owezarski, LAAS, France; Edmundo Monteiro, University of Coimbra, Portugal

5 Responsiveness on the Interactive Grid

Colin Allison, Stuart Purdie, Alan Miller, University of St Andrews, UK



- 6 Efficient Estimation of More Detailed Internet IP Maps**
Sangmin Kim, Khaled Harfoush, North Carolina State University, USA

Tuesday, 26 June 2007 2:00pm - 3:40pm Dochart 9

CQR09: QoS in Wireless Local Area Networks

- 1 Modeling and Analysis of Handoffs in Cellular and WLAN Integration**
Weiwei Xia, Lianfeng Shen, Southeast University, PRC
- 2 Impact of Multi-rate VoIP on Quality of Service in IEEE 802.11e EDCA with Link Adaptation**
Takehiro Kawata, Hiroshi Yamada, NTT Corporation, Japan
- 3 A Model-based Admission Control for IEEE 802.11e Networks**
Rosario G. Garroppo, Stefano Giordano, Stefano Lucetti, Luca Tavanti, University of Pisa, Italy
- 4 Decomposition of Energy Consumption in IEEE 802.11**
Mustafa Ergen, Pravin Varaiya, University of California at Berkeley, USA
- 5 Saturation Throughput Analysis of the 802.11e**
Inanc Inan, Feyza Keceli, Ender Ayanoglu, University of California at Irvine, USA
- 6 An End-to-End Technique to Estimate the Transmission Rate of an IEEE 802.11 WLAN**
Antonio A. de A. Rocha, Rosa M. M. Leão, Edmundo de Souza e Silva, Federal University of Rio de Janeiro, Brazil

Tuesday, 26 June 2007 4:00pm - 5:40pm Dochart 1

CQR10: Network Recovery and Protection

- 1 Optimization of the Self-protecting Multipath for Deployment in Legacy Networks**
Michael Menth, Rüdiger Martin, Ulrich Spörlein, University of Würzburg, Germany
- 2 Scalable Resilient Overlay Networks Using Destination-Guided Detouring**
Sameer Qazi, Tim Moors, University of New South Wales, Australia
- 3 A QoS-based Scheme for Planning and Dimensioning of Optical Label Switched Networks**
Yassine Khelifi, Noureddine Boudriga, Mohammad S. Obaidat, University of November 7th at Carthage, Tunisia; Monmouth University, USA
- 4 LSP and Back up Path Setup in MPLS Networks Based on Path Criticality Index**
Ali Tizghadam, Alberto Leon-Garcia, Toronto University, Canada
- 5 A Dynamic QoS-based Scheme for Admission Control in OBS Networks**
Amor Lazzez, Sihem Guemara El Fatmi, Noureddine Boudriga, Mohammad S. Obaidat, University of November 7th at Carthage, Tunisia; Monmouth University, USA
- 6 A Forward-Backward Optical Wavelength Path Establishment Scheme with Low Blocking Probability in WDM Networks**
Shinsuke Nagai, Kogakuin University, Japan; Hirotada Kawakami, eAccess Ltd., Japan; Saneyasu Yamaguchi, Koichi Asatani, Kogakuin University, Japan

Tuesday, 26 June 2007 4:00pm - 5:40pm Dochart 2

CQR11: QoS in Emerging Wireless Networks

- 1 An Hysteretic Source Rate Control Scheme for a Finite Buffer in a Wireless Environment**
Jun-Bae Seo, Hyong-Woo Lee, Korea University, Korea
- 2 HSDPA Performance in Live Networks**
Marko Jurvensuu, Jarmo Prokkola, Mikko Hanski, Pekka Perälä, VTT Technical Research Centre of Finland, Finland

- 3 Optimal Scheduling Policy Determination for High Speed Downlink Packet Access**

Hussein Al-Zubaidy, Jerome Talim, Ioannis Lambadaris, Carleton University, Canada

- 4 Quality-of-Service Routing in Heterogeneous Networks with Optimal Buffer and Bandwidth Allocation**

Waseem Sheikh, Arif Ghafoor, Purdue University, USA

- 5 Application of Extreme Value Theory to the Analysis of Wireless Network Traffic**

Chunfeng Liu, Yantai Shu, Jiakun Liu, Tianjin University, PRC; Oliver W. W. Yang, University of Ottawa, Canada

- 6 Measuring WCDMA and HSDPA Delay Characteristics with QoSMeT**

Jarmo Prokkola, Mikko Hanski, Marko Jurvensuu, Milla Immonen, VTT Technical Research Centre of Finland, Finland

Wednesday, 27 June 2007 9:00 - 10:40am Dochart 1

CQR12: Network Resource Management

- 1 Analytical Methods for Resource Allocation and Admission Control with Dual-Leaky-Bucket Regulated Traffic**
Paolo Giacomazzi, Luigi Musumeci, Gabriella Saddemi, Giacomo Verticale, Politecnico di Milano, Italy
- 2 Utility-aware Resource Allocation for Multi-stream Overlay Multicast**
Ji Xu, Jiangchuan Liu, Simon Fraser University, Canada; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC; Xiaowen Chu, Hong Kong Baptist University, PRC
- 3 Resource Optimization to Provision a Virtual Private Network Using the Hose Model**
Monia Ghobadi, Sudhakar Ganti, Gholamali C. Shoja, University of Victoria, Canada
- 4 FP/FIFO Scheduling: Deterministic versus Probabilistic QoS Guarantees and p-Schedulability**
Leila Azouz Saidane, ; Skander Azzaz, ENSI, Tunisia; Steven Martin, LRI, University of Paris-Sud, France; Pascale Minet, INRIA, France
- 5 Implementation and Simulation of DBHPD and CBQ Scheduling—A Comparative Study**
Johanna Nieminen, Marko Luoma, Olli-Pekka Lamminen, Helsinki University of Technology, Finland; Antti Paju, Creanord, Finland
- 6 ORC-GPS: Output Rate-controlled Scheduling Policy for Delay Guarantees**
Masaki Hanada, Hidenori Nakazato, Waseda University, Japan

Wednesday, 27 June 2007 11:00am - 12:40pm Dochart 1

CQR13: Network Traffic Engineering

- 1 A New Path Computation Algorithm and Its Implementation in NS2**
Davide Adami, Christian Callegari, Stefano Giordano, Michele Pagano, University of Pisa, Italy
- 2 A Multilink Protocol with the Per Flow Resequencing and Its Performance Evaluation**
Toshihiro Shikama, Mitsubishi Electric Corporation, Japan; Takashi Watanabe, Tadanori Mizuno, Shizuoka University, Japan
- 3 Modelling Priority Queueing Systems with Multi-class Self-similar Network Traffic**
Xiaolong Jin, Geyong Min, University of Bradford, UK
- 4 A Lightweight, Scalable and Distributed Admission Control Algorithm for Voice Traffic**
Parag Kulkarni, University of Ulster, UK; Cisco Systems Inc., USA; Petre Dini, Cisco Systems Inc., USA; Sally McClean, Gerard Parr, Michaela Black, University of Ulster, UK
- 5 Sensitivity of Traffic Matrix Estimation Techniques to Their Underlying Assumptions**
Ilmari Juva, Helsinki University of Technology, Finland



- 6 Preventing Bandwidth Abuse at the Router through Sending Rate Estimate-based Active Queue Management**
Venkatesh Ramaswamy, Leticia Cuéllar, Stephan Eidenbenz, Nicolas Hengartner, Los Alamos National Laboratory, USA

Wednesday, 27 June 2007 2:00pm - 3:40pm Dochart 1

CQR14: Traffic Control Mechanisms

- 1 Supporting Bulk Data Transfers of High-end Applications with Guaranteed Completion Time**
Bin Bin Chen, National University of Singapore, Singapore; Pascale Vicat-Blanc Primet, ENS-Lyon, France
- 2 Buffer Occupation Probability of Trace-driven Background Streams in Hybrid Simulation**
Ben Lauwens, Bart Scheers, Royal Military Academy, Belgium; Antoine Van de Capelle, Katholieke Universiteit Leuven, Belgium
- 3 New Exploration of Packet-pair Probing for Available Bandwidth Estimation and Traffic Characterization**
Yu Cheng, Illinois Institute of Technology, USA; Vikram Ravindran, Alberto Leon-Garcia, University of Toronto, Canada; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC
- 4 NATALIE: An Adaptive, Network-aware Traffic Equalizer**
Yihua He, University of California at Riverside, USA; Jack Brassil, HP Laboratories, USA
- 5 Properties of the Traffic Output by a Leaky-bucket Policier with Long-range Dependent Input Traffic**
Stefano Bregni, Paolo Giacomazzi, Gabriella Saddemi, Politecnico di Milano, Italy

- 6 Optimal Link Weights for Maximizing QoS Traffic**
Jian Chu, Chin-Tau Lea, ong Kong University of Science and Technology, PRC

Wednesday, 27 June 2007 4:00pm - 5:40pm Dochart 1

CQR15: QoS Techniques for Video and Voice

- 1 A Rate Control Scheme for Adaptive Video Streaming over the Internet**
Panagiotis Papadimitriou, Vassilis Tsaoussidis, Demokritos University, Greece
- 2 MPEG-4 FGS Video Streaming Traffic Delivery Experimentation in an IP/DVB Network**
Thomas Pliakas, George Kormentzas, University of Aegean, Greece; Charalabos Skianis, Anastasios Kourtis, National Centre for Scientific Research 'Demokritos', Greece
- 3 MOS-based Rate Adaption for VoIP Sources**
N. T. Moura, B. A. Vianna, C. V. N. Albuquerque, V. E. F. Rebello, C. Boeres, Universidade Federal Fluminense, Brazil
- 4 Performance Evaluation of Quality of VoIP Service over UMTS-UTRAN R99**
Andrea Barbaresi, Andrea Mantovani, Telecom Italia, Italy
- 5 Guaranteeing Enterprise VoIP QoS with Novel Approach to DiffServ AF Configuration**
Qiang Yang, Jonathan M. Pitts, Queen Mary, University of London, UK
- 6 Flow Management for SIP Application Servers**
Jing Sun, Tsinghua University, PRC; Jinfeng Hu, Ruixiong Tian, Bo Yang, IBM China Research Lab, PRC

Communication Theory Symposium

Monday, 25 June 2007 2:00 - 3:40pm Carron 1

CT01: LDPC I

- 1 A Modified Bit-flipping Decoding Algorithm for Low-density Parity-check Codes**
T. M. N. Ngatched, F. Takawira, University of KwaZulu-Natal, South Africa; M. Bossert, University of Ulm, Germany
- 2 A Class of LDPC Erasure Distributions with Closed-form Threshold Expression**
Enrico Paolini, Marco Chiani, University of Bologna, Italy
- 3 ACE Spectrum of LDPC Codes and Generalized ACE Design**
Dejan Vukobratovic, Aleksandar Djurendic, Vojin Senk, University of Novi Sad, Serbia
- 4 Low-complexity, Low-memory EMS Algorithm for Non-binary LDPC Codes**
Adrian Voicila, STMicroelectronics, France; University of Cergy-Pontoise ETIS, France; David Declercq, François Verdier, University of Cergy-Pontoise ETIS, France; Marc Fosserier, University Hawaii at Manoa, USA; Pascal Urard, STMicroelectronics, France
- 5 An Efficient Analysis of Finite-length LDPC Codes**
Raman Yazdani, Masoud Ardakani, University of Alberta, Canada
- 6 On the Enhancement of LDPC Codes in the IEEE 802.16 Physical Layer**
Khaled ElMahgoub, University of Mississippi, USA; Mohammed Nafie, Cairo University, Egypt

Monday, 25 June 2007 4:00 - 5:40pm Carron 1

CT02: Cooperative Networks I

- 1 Diversity-multiplexing Tradeoff in Half-duplex Relay Systems**
Melda Yuksel, Elza Erkip, Polytechnic University, USA
- 2 Achievable Diversity-multiplexing-Delay Tradeoff for ARQ Cooperative Broadcast Channels**
Lingfan Weng, Ross D. Murch, The Hong Kong University of Science and Technology, PRC

- 3 Large System Performance Evaluation of the DS/CDMA Relay Channel Using Linear Receivers**
David Gregoratti, Xavier Mestre, Centre Tecnològic de Telecomunicacions de Catalunya, Spain
- 4 Physical Network Coding in Two-way Wireless Relay Channels**
Petar Popovski, Hiroyuki Yomo, Aalborg University, Denmark
- 5 Partial Decoding for Synchronous and Asynchronous Gaussian Multiple Relay Channels**
Aitor del Coso, Christian Ibars, Centre Tecnològic de Telecomunicacions de Catalunya, Spain

Tuesday, 26 June 2007 9:00 - 10:40am Carron 1

CT03: MIMO III

- 1 A Space-Time Code Design for Partial-response CPM: Diversity Order and Coding Gain**
Alenka G. Zajić, Gordon L. Stüber, Georgia Institute of Technology, USA
- 2 Achieving High Spectral Efficiency with Adaptive Layered Space Time Codes under Rate Control**
Patricia Layec, Raphaël Visoz, France Telecom, France; Antoine O. Berthet, L'École Supérieure d'Électricité, France
- 3 Hybrid-ARQ Code Combining for MIMO Using Multidimensional Space-Time Trellis Codes**
Zhihong Ding, Conexant System, Inc., USA; Michael Rice, Brigham Young University, USA
- 4 Analysis of Space-Time Coded and Spatially Multiplexed MIMO Systems with ZF Receivers**
Mikko Vehkaperä, NTNU, Norway; Markku Juntti, University of Oulu, Finland
- 5 Level Crossing Rates of MIMO-MRC Ricean Channels and Their Implications on Adaptive Systems**
Predrag Ivanis, Dusan Dragic, University of Belgrade, Serbia; Branka Vucetic, The University of Sydney, Australia
- 6 Characterization of Mutual Information of Spatially Correlated MIMO Channels with Keyhole**
Andreas Müller, Joachim Speidel, University of Stuttgart, Germany



Tuesday, 26 June 2007 11:00am - 12:40pm Carron 1

CT04: OFDM I

- 1 On the Use of Correlative Coding for OFDM**
Norman C. Beaulieu, University of Alberta, Canada; Peng Tan, TELUS Communications Inc., Canada
- 2 Peak-to-Average Power Ratio Reduction in MIMO OFDM**
Robert F. H. Fischer, Martin Hoch, Universität Erlangen–Nürnberg, Germany
- 3 Algebraic Constructions of Space–Frequency Codes**
Mao-Ching Chiu, Hsiao-feng Lu, National Chung-Cheng University, ROC
- 4 Semiblind Carrier Frequency Offset Estimation for OFDM Systems**
Tilde Fusco, Ferdinando Marrone, Mario Tanda, Università di Napoli Federico II, Italy
- 5 Capacity Achieving Pilot Design for MIMO-OFDM over Time-varying Frequency-selective Channels**
Ivan Cosovic, Gunther Auer, DoCoMo Euro-Labs, Germany

Tuesday, 26 June 2007 11:00am - 12:40pm SECC Hall 2

CT05P: Communications Theory Symposium Poster Session

- 1 Capacity-based Uplink Scheduling Using Long-term Channel Knowledge**
Bernd Bandemer, Samuli Visuri, Nokia Research Center, Finland
- 2 Performance Comparison of Optimal and Suboptimal Forward-link Channel-sharing Schemes**
Debdeep Chatterjee, Surendra Boppana, Tan F. Wong, John M. Shea, University of Florida, USA
- 3 Unifying Characterization of Max–Min Fairness in Wireless Networks by Graphs**
Marcin Wicznanowski, Holger Boche, University of Technology Berlin, Germany; Slawomir Stanczak, Fraunhofer German-Sino Lab for Mobile Communications, Germany
- 4 Cochannel Interference Whitening Receiver Designs for BPSK in Nakagami- m /Rayleigh Fading**
Amir Masoud Rabiei, Norman C. Beaulieu, K. Sivanesan, University of Alberta, Canada
- 5 Packet-symbol Decoding for Reliable Multipath Reception with No Sequence Numbers**
John J. Metzner, Pennsylvania State University, USA
- 6 Maximum-likelihood Receivers for FFH/BFSK Systems with Multitone Jamming over Frequency-selective Rayleigh Fading Channels**
Tsan-Ming Wu, Po-Chin Hung, Chung Yuan Christian University, ROC
- 7 Maximal Capacity Partial Response Signaling**
Fredrik Rusek, John B. Anderson, Lund University, Sweden
- 8 Multiple-symbol Differential Detection Based on Combinatorial Geometry**
Volker Pauli, University of Erlangen–Nuremberg, Germany; Lutz Lampe, Robert Schober, University of British Columbia, Canada; Komei Fukuda, Swiss Federal Institute of Technology Zurich, Switzerland
- 9 Applying Techniques from Frame Synchronization for Biological Sequence Analysis**
Johanna Weindl, Joachim Hagenauer, Technical University of Munich, Germany
- 10 Error Floors of LDPC Coded BICM**
Aditya Ramamoorthy, Iowa State University, USA; Nedeljko Varnica, Marvell Semiconductor Inc., USA
- 11 Joint Transmitter and Receiver Optimization for Continuous-time Overloaded Gaussian Multiple-access Channels**
Joon Ho Cho, Pohang University of Science and Technology, Korea

12 Efficient Factorisation Algorithm for List Decoding Algebraic–Geometric and Reed–Solomon Codes

L. Chen, R. A. Carrasco, M. Johnston, E. G. Chester, Newcastle University, UK

13 Adaptive Channel Reuse in Cellular Systems

Yifan Liang, Andrea Goldsmith, Stanford University, USA

14 Noncoherent Block-Coded QAM

Ruey-Yi Wei, Tzu-Ching Sue, Hsi-Hua Wang, Chin-Sung Wang, National Central University, ROC

15 On the Capacity of Cellular Networks with Global LMMSE Receiver

Boon Loong Ng, Jamie S. Evans, Stephen V. Hanly, University of Melbourne, Australia

16 On Bit Error Robustness of Trellis Source Codes

Tomas Eriksson, Norbert Goertz, The University of Edinburgh, UK

17 On the Optimal Amount of Training for Peak-power-limited Rayleigh Fading Channels

Wei Mao, Xin Su, Ming Zhao, Xibin Xu, Tsinghua University, PRC

18 Recursive Power Allocation in Gaussian Layered Broadcast Coding with Successive Refinement

Chris T. K. Ng, Stanford University, USA; Deniz Gündüz, Polytechnic University, USA; Andrea J. Goldsmith, Stanford University, USA; Elza Erkip, Polytechnic University, USA

19 Adaptive vs. Diversity Transmission for Multiuser MISO Systems with Imperfect CSIT

Frederick K. H. Lee, Tzero Technologies, USA; Mai H. Vu, Harvard University, USA; Argyaswami J. Paulraj, Stanford University, USA

20 IEEE 802.11b Complementary Code Keying and Complementary Signals Derived from Biorthogonal Sequences

Michael B. Pursley, Thomas C. Royster IV, Clemson University, USA

21 Feedback of Channel State Information in Wireless Systems

Pedro Tejera, Wolfgang Utschick, Munich University of Technology, Germany

22 New Bounds on the Aperiodic Total Squared Correlation of Binary Signature Sets and Optimal Designs

Harish Ganapathy, Dimitris A. Pados, State University of New York–Buffalo, USA; George N. Karystinos, Technical University of Crete, Greece

Tuesday, 26 June 2007 2:00pm - 3:40pm Carron 1

CT06: LDPC II

- 1 Lowering Error Floor of LDPC Codes using a Joint Row-column Decoding Algorithm**
Zhiyong He, Sébastien Roy, Paul Fortier, Laval University, Canada
- 2 Design of Unequal Error Protection LDPC Codes for Higher Order Constellations**
Neele von Deetzen, Jacobs University Bremen, Germany; Sara Sandberg, Luleå University of Technology, Sweden
- 3 Informed Dynamic Scheduling for Belief-propagation Decoding of LDPC Codes**
Andres I. Vila Casado, Miguel Griot, Richard D. Wesel, University of California at Los Angeles, USA
- 4 Selected Mapping with LDPC Codes Constructed by Modified Progressive Edge Growth**
Wolfgang Rave, Dresden University of Technology, Germany
- 5 Systematic Modification of Parity-check Matrices for Efficient Encoding of LDPC Codes**
Mohamed Shaqfeh, Norbert Goertz, University of Edinburgh, UK
- 6 Quasi-cyclic Low-density Parity-check Codes in the McEliece Cryptosystem**
Marco Baldi, Franco Chiaraluce, Università Politecnica delle Marche, Italy; Roberto Garelli, Francesco Mininni, Politecnico di Torino, Italy



Tuesday, 26 June 2007 4:00pm - 5:40pm Carron 1

CT07: Cooperative Networks II

1 Robust Power Allocation for Amplify-and-Forward Relay Networks

Tony Q. S. Quek, Moe Z. Win, Massachusetts Institute of Technology, USA; Hyundong Shin, Kyung Hee University, Korea; Marco Chiani, University of Bologna, Italy

2 Distributed Source Coding with Optimized Irregular Turbo Codes

David Van Renterghem, Xavier Jaspar, Benoit Macq, Luc Vandendorpe, Université catholique de Louvain, Belgium

3 Distortion Exponents for Different Source-channel Diversity Achieving Schemes over Multi-hop Channels

Karim G. Seddik, University of Maryland at College Park, USA; Andres Kwasinski, Texas Instruments Inc., USA; K. J. Ray Liu, University of Maryland at College Park, USA

4 A Framework for Optimizing the Uplink Performance of Distributed Antenna Systems under a Constrained Backhaul

Patrick Marsch, Gerhard Fettweis, Technische Universität Dresden, Germany

5 Non-orthogonal Transmission and Noncoherent Fusion of Censored Decisions

Simon Yiu, Robert Schober, University of British Columbia, Canada

Wednesday, 27 June 2007 9:00 - 10:40am Carron 1

CT08: Turbo coding and iterative decoding

1 Application of Cumulant Method In Performance Evaluation of Turbo-like Codes

Ali Abedi, University of Maine, USA; Mary E. Thompson, Amir K. Khandani, University of Waterloo, Canada

2 Some Results on the Binary Minimum Distance of Reed-Solomon Codes and Block Turbo Codes

Raphaël Le Bidan, Ramesh Pyndiah, Ecole Nationale Supérieure des Telecommunications-Bretagne, France; Patrick Adde, Ecole Nationale Supérieure des Telecommunications, France

3 Hybrid ARQ Scheme Based on Recursive Convolutional Codes and Turbo Decoding

Tamara Rodrigues, Richard Demo Souza, UTFPR, Brazil; Marcelo Eduardo Pellenz, Pontifical Catholic University of Paraná, Brazil

4 On the Error Floor Performance of SCTCM Systems with Non-recursive Inner Codes

Anders Nilsson, Tor M. Aulin, Chalmers University of Technology, Sweden

5 Channel Estimation Considerations for Iterative Decoding in Wireless Communications

Pirouz Zarrinkhat, Airvana Inc., USA; Masoud Ardakani, Raman Yazdani, University of Alberta, Canada

6 Probability Density Functions of Reliability Metrics for 16-QAM-based BICM Transmission in Rayleigh Channel

Leszek Szczecinski, University of Quebec, Canada; Alex Alvarado, Chalmers University of Technology, Sweden; Rodolfo Feick, Universidad Técnica Federico Santa María, Chile

Wednesday, 27 June 2007 11:00am - 12:40pm Carron 1

CT09: MIMO X

1 Graph-based Detector for BLAST Architecture

Jun Hu, Tolga M. Duman, Arizona State University, USA

2 A Low-complexity Path Metric for Tree-based Multiple-antenna Detectors

Christian Kuhn, Munich University of Technology, Germany; Norbert Goertz, The University of Edinburgh, UK

3 Transmission Strategy for MIMO Correlated Rayleigh Fading Channels with Mutual Coupling

Feng Li, Q. T. Zhang, City University of Hong Kong, PRC

4 Adaptive Data Transmission in Downlink MIMO-OFDM Systems with Pre-equalization

P. Trifonov, St. Petersburg State Polytechnic University, Russia; University of Ulm, Germany; Elena Costa, Siemens AG, Germany

5 MIMO Broadcast Channels with Channel Estimation

Jun Shi, Minnie Ho, Intel Corporation, USA

6 On the Sum-rate of Opportunistic Beamforming Schemes with Multiple Antennas at the Receiver

R. Bosisio, U. Spagnolini, Politecnico di Milano, Italy

Wednesday, 27 June 2007 2:00pm - 3:40pm Carron 1

CT10: OFDM II and UWB

1 A Systematic Design of Multiuser Space-Frequency Codes for MIMO-OFDM Systems

Wei Zhang, Khaled Ben Letaief, The Hong Kong University of Science and Technology, PRC

2 Narrowband Interference Mitigation in Turbo-coded OFDM Systems

Sheetal Kalyani, Vimal Raj, K. Giridhar, Indian Institute of Technology Madras, India

3 Error Probability of OFDM Systems Impaired by Carrier Frequency Offset in Frequency Selective Rayleigh Fading Channels

Peng Zhou, Ming Jiang, Chunming Zhao, Wei Xu, Southeast University, PRC

4 Synchronization in MB-OFDM-based UWB Systems

T. Jacobs, Y. Li, H. Minn, University of Texas at Dallas, USA; R. M. A. P. Rajatheva, Asian Institute of Technology, Thailand

5 Multipath-resistant Incoherent Space-Time Codes for IR-UWB MIMO Systems

Enzo Baccarelli, Mauro Biagi, Cristian Pelizzoni, Nicola Cordeschi, University of Rome "La Sapienza", Italy

6 Multiple-access Slightly Frequency-shifted Reference Ultra-wideband Communications for Dense Multipath Channels

Qu Zhang, Dennis L. Goeckel, University of Massachusetts, USA

Wednesday, 27 June 2007 4:00pm - 5:40pm Carron 1

CT11: Performance Analysis

1 BER of MFSK With Postdetection Switch-and-Stay Combining in Correlated Rayleigh and Rician Fading

Sasan Haghighi, Norman C. Beaulieu, University of Alberta, Canada

2 Optimum Combining of Rician-faded Signals: Analysis in the Presence of Interference and Noise

Matthew R. McKay, The Hong Kong University of Science and Technology, PRC; Alberto Zanella, University of Bologna, Italy; Iain B. Collings, CSIRO, Australia; Marco Chiani, University of Bologna, Italy

3 Exact Average Bit-error Probability for Maximal Ratio Combining with Multiple Cochannel Interferers and Rayleigh Fading

Amir Ali Basri, Teng Joon Lim, University of Toronto, Canada

4 Antenna Array Processing in Fading and Interference: An Interference-cancellation vs. Diversity Comparative Performance

Juan M. Romero-Jerez, University of Málaga, Spain; Andrea J. Goldsmith, Stanford University, USA

5 Infinite Series Representations of the Trivariate and Quadrivariate Nakagami- m Distributions

K. D. P. Dharmawansa, R. M. A. P. Rajatheva, Asian Institute of Technology, Thailand; C. Tellambura, University of Alberta, Canada

6 The Probability of Undetected Error for Varshamov-Tenengol'ts Codes

Franco Chiaraluce, Marco Baldi, Susanna Spinsante, Università Politecnica delle Marche, Italy; Torleiv Kløve, University of Bergen, Norway



Computer and Communications Network Security Symposium

Monday, 25 June 2007 2:00 - 3:40pm Carron 2

CCN01: Ad Hoc and Peer-to-Peer Network Security

- 1 Improving the Download Time of BitTorrent-like Systems**
Chi-Jen Wu, Cheng-Ying Li, Jan-Ming Ho, Academia Sinica, ROC
- 2 On the Risk-based Operation of Mobile Attacks in Wireless Ad Hoc Networks**
Vasileios Karyotis, Symeon Papavassiliou, Mary Grammatikou, National Technical University of Athens, Greece
- 3 On Mitigating In-band Wormhole Attacks in Mobile Ad Hoc Networks**
Xu Su, Rajendra V. Boppana, University of Texas at San Antonio, USA
- 4 Detection of Masquerade Attacks on Wireless Sensor Networks**
Vijay Bhuse, Western Michigan University, USA; Dartmouth College, USA; Ajay Gupta, Ala Al-Fuqaha, Western Michigan University, USA
- 5 Wheel of Trust: A Secure Framework for Overlay-based Services**
Guor-Huar Lu, Zhi-Li Zhang, University of Minnesota, USA
- 6 Enhanced Intrusion Detection System for Discovering Malicious Nodes in Mobile Ad hoc Networks**
Nidal Nasser, Yunfeng Chen, University of Guelph, Canada

Monday, 25 June 2007 4:00 - 5:40pm Carron 2

CCN02: Authentication and Biometric Security

- 1 Security Analysys of IEEE 802.16**
Leonardo Maccari, Matteo Paoli, Romano Fantacci, University of Florence, Italy
- 2 An Agent Based Authentication Architecture for WLAN/Cellular Integrated Service**
Minghui Shi, Humphrey Rutagemwa, Xuemin Shen, Jon W. Mark, University of Waterloo, Canada; Aladdin Saleh, Bell Canada, Canada
- 3 Two-factor Localized Authentication Scheme for WLAN Roaming**
Xiaodong Lin, Haojin Zhu, Pin-Han Ho, Xuemin Shen, University of Waterloo, Canada
- 4 Estimating Ridge Topologies with High Curvature for Fingerprint Authentication Systems**
Yi Wang, Jiankun Hu, Royal Melbourne Institute of Technology, Australia
- 5 Cryptographically Transparent Session Initiation Protocol (SIP) Proxies**
Vijay K. Gurbani, Bell Labs, Lucent Technologies, USA; Dean Willis, Cisco Systems, USA; Francois Audet, Nortel Networks, USA
- 6 Generation of Reliable PINs from Fingerprints**
Fengling Han, Jiankun Hu, Leilei He, Yi Wang, Royal Melbourne Institute of Technology, Australia

Tuesday, 26 June 2007 9:00 - 10:40am Carron 2

CCN03: Distributed Security and Denial-of-Service Attacks

- 1 Using Client Puzzles to Mitigate Distributed Denial of Service Attacks in the Tor Anonymous Routing Environment**
Nicholas A. Fraser, Douglas J. Kelly, Richard A. Raines, Rusty O. Baldwin, Barry E. Mullins, Air Force Institute of Technology, USA

- 2 Spectral Analysis of TCP Flows for Defense against Reduction-of-Quality Attacks**
Yu Chen, State University of New York-Binghamton, USA; Kai Hwang, University of Southern California, USA
- 3 Combating against Attacks on Encrypted Protocols**
Zubair Md. Fadlullah, Tarik Taleb, Tohoku University, Japan; Nirwan Ansari, New Jersey Institute of Technology, USA; Kazuo Hashimoto, Tohoku University, Japan; Yutake Miyake, KDDI Labs, Japan; Yoshiaki Nemoto, Nei Kato, Tohoku University, Japan
- 4 Machine Learning for Automatic Defence against Distributed Denial of Service Attacks**
Stefan Seufert, Darragh O'Brien, Dublin City University, Ireland
- 5 Distributed ONS and Its Impact on Privacy**
Benjamin Fabian, Oliver Günther, Humboldt-University Berlin, Germany
- 6 Detecting Flooding-based DDoS Attacks**
Yonghua You, Mohammad Zulkernine, Queen's University, Canada; Anwar Haque, Bell Canada, Canada

Tuesday, 26 June 2007 11:00am - 12:40pm Carron 2

CCN04: Ensuring Trust in Ad Hoc Networks

- 1 Channel Protection with Real-time and In-service Performance Monitoring for Next Generation Secure WDM Networks**
Stamatis V. Kartalopoulos, The University of Oklahoma, USA
- 2 An Efficient Cluster-based Proactive Secret Share Update Scheme for Mobile Ad Hoc Networks**
Ying Dong, The University of Hong Kong, PRC; Ai Fen Sui, Siemens Ltd., China; Siu Ming Yiu, Victor O. K. Li, Lucas C. K. Hui, H. W. Go, The University of Hong Kong, PRC
- 3 ASRPAKE: An Anonymous Secure Routing Protocol with Authenticated Key Exchange for Wireless Ad Hoc Networks**
Xiaodong Lin, University of Waterloo, Canada; Rongxing Lu, Shanghai Jiao Tong University, PRC; Haojin Zhu, Pin-Han Ho, Xuemin Shen, University of Waterloo, Canada; Zhenfu Cao, Shanghai Jiao Tong University, PRC
- 4 A Confident Community to Secure Mobile Ad Hoc Networks**
Abderrezak Rachedi, Abderrahim Benslimane, University of Avignon, France; Lei Guang, Chadi Assi, Concordia University, Canada
- 5 KeyRev: An Efficient Key Revocation Scheme for Wireless Sensor Networks**
Yong Wang, Byrav Ramamurthy, University of Nebraska-Lincoln, USA; Xukai Zou, Indiana University-Purdue University Indianapolis, USA
- 6 Trust Establishment in Distributed Networks: Analysis and Modeling**
Yan Lindsay Sun, Yafei Yang, University of Rhode Island, USA

Tuesday, 26 June 2007 2:00pm - 3:40pm Carron 2

CCN05: Firewalls

- 1 Reducing the Size of Rule Set in a Firewall**
MyungKeun Yoon, Shigang Chen, Zhan Zhang, University of Florida, USA
- 2 A Dynamic Stateful Multicast Firewall**
Shen Li, Vijay Sivaraman, University of New South Wales, Australia; CSIRO, Australia; Alex Krumm-Heller, Craig Russell, CSIRO, Australia
- 3 A Novel Algorithm and Architecture for High Speed Pattern Matching in Resource-limited Silicon Solution**
Nen-Fu Huang, Yen-Ming Chu, Chi-Hung Tsai, Chen-Ying Hsieh, Yih-Jou Tzang, National Tsing-Hua University, ROC;



- 4 A Deterministic Cost-effective String Matching Algorithm for Network Intrusion Detection System**
Nen-Fu Huang, Yen-Ming Chu, Chen-Ying Hsieh, Chi-Hung Tsai, Yih-Jou Tzang, National Tsing-Hua University, ROC

5 Flow Digest: A State Replication Scheme for Stateful High Availability Cluster

Yi-Hsuan Feng, Nen-Fu Huang, National Tsing-Hua University, ROC; Rong-Tai Liu, Broadweb Corp., ROC; Meng-Huan Wu, National Tsing-Hua University, ROC

- 6 Automatic Conflict Analysis and Resolution of Traffic Filtering Policy for Firewall and Security Gateway**
Simone Ferraresi, ELSAG S.p.A., Italy; University of Roma "La Sapienza", Italy; Stefano Pesic, Livia Trazza, ELSAG S.p.A., Italy; Andrea Baiocchi, University of Roma "La Sapienza", Italy

Tuesday, 26 June 2007 2:00pm - 3:40pm SECC Hall 2

CCN06P: Computer and Communications Network Security Symposium Posters

- 1 Quantum Cryptography for Secure Optical Networks**
Stamatios V. Kartalopoulos, The University of Oklahoma, USA
- 2 Security Flaws in Kuribayashi-Tanaka Fingerprinting Protocol**
Yongdong Wu, Institute for Infocomm Research, Singapore
- 3 Constant Storage Self-healing Key Distribution with Revocation in Wireless Sensor Network**
Ratna Dutta, Institute for Infocomm Research, Singapore; Sourav Mukhopadhyay, National University of Singapore, Singapore
- 4 Security in All-optical Networks: Self-organization and Attack Avoidance**
Jae-Seung Yeom, Ozan Tonguz, Carnegie Mellon University, USA; Gerardo Castañón, Tecnológico de Monterrey, México
- 5 Oblivious Keyword Search Protocols in the Public Database Model**
Huafei Zhu, Feng Bao, Institute for Infocomm Research, Singapore
- 6 Distributed Privacy-preserving Policy Reconciliation**
Ulrike Meyer, Siemens Networks GmbH & Co, Germany; Susanne Wetzel, Sotiris Ioannidis, Stevens Institute of Technology, USA
- 7 Constrained Wavelet Tree Quantization for Image Watermarking**
Min-Jen Tsai, Chen-Long Lin, National Chiao Tung University, ROC
- 8 Preventing ARP Attacks using a Fuzzy-based Stateful ARP Cache**
Zouheir Trabelsi, Wassim El-Hajj, University of the United Arab Emirates, United Arab Emirates
- 9 Framework for Agent-based Role Delegation**
Ezedin Barka, University of the United Arab Emirates, United Arab Emirates; Ravi Sandhu, George Mason University, USA
- 10 Hiding Your Wares: Transparently Retrofitting Memory Confidentiality into Legacy Applications**
Jamie Levy, Bilal Khan, City University of New York, USA
- 11 Accurate Classification of the Internet Traffic Based on the SVM Method**
Zhu Li, Ruixi Yuan, Xiaohong Guan, Tsinghua University, PRC
- 12 A Grammar for Specifying Usage Control Policies**
Rafael Teigão, Carlos Maziero, Altair Santin, Pontifical Catholic University of Paraná, Brazil
- 13 Using Session-keystroke Mutual Information to Detect Self-propagating Malicious Codes**
Syed Ali Khayam, National University of Sciences & Technology, Pakistan; Hayder Radha, Michigan State University, USA

Tuesday, 26 June 2007 4:00pm - 5:40pm Carron 2

CCN07: Intrusion Detection and Avoidance

- 1 The Power of Temporal Pattern Processing in Anomaly Intrusion Detection**
Mohammad Al-Subaie, Mohammad Zulkernine, Queen's University, Canada

2 Security Enhancements in Novel Passive Optical Networks

Alan Harris, University of North Florida, USA; Andres Sierra, Stamatios V. Kartalopoulos, James J. Sluss Jr., The University of Oklahoma, USA

3 Distributed Early Worm Detection Based on Payload Histograms

Yuji Waizumi, Masashi Tsuji, Hiroshi Tsunoda, Tohoku University, Japan; Nirwan Ansari, New Jersey Institute of Technology, USA; Yoshiaki Nemoto, Tohoku University, Japan

4 A Cooperative AIS Framework for Intrusion Detection

Katja Luther, Rainer Bye, Tansu Alpcan, Achim Müller, Şahin Albayrak, Technische Universität Berlin, Germany

5 Towards Energy-efficient Intrusion Detection in Pervasive Computing

Bo Zhou, Qi Shi, Madjid Merabti, Liverpool John Moores University, UK

6 Petrifying Worm Cultures: Scalable Detection and Immunization in Untrusted Environments

Joel O. Sandin, Stanford University, USA; Bilal Khan, City University of New York, USA

Wednesday, 27 June 2007 9:00 - 10:40am Carron 2

CCN08: Network Security Analysis and Simulation

- 1 S.T.R.E.S.S.: Stress Testing and Reverse Engineering for System Security**
Matteo Rosi, Leonardo Maccari, Romano Fantacci, University of Florence, Italy
- 2 Worm Traffic Analysis and Characterization**
Alberto Dainotti, Antonio Pescapé, Giorgio Ventre, University of Napoli Federico II, Italy
- 3 A Hybrid Model to Detect Malicious Executables**
Mohammad M. Masud, Latifur Khan, Bhavani Thuraisingham, The University of Texas at Dallas, USA
- 4 A Framework of Attacker Centric Cyber Attack Behavior Analysis**
Xuena Peng, Hong Zhao, Northeastern University, PRC
- 5 SecureRank: A Risk-based Vulnerability Management Scheme for Computing Infrastructures**
R. Ann Miura-Ko, Nicholas Bambos, Stanford University, USA
- 6 A Web-based Network Worm Simulator**
Nasir Jamil, Thomas M. Chen, Southern Methodist University, USA

Wednesday, 27 June 2007 11:00am - 12:40pm Carron 2

CCN09: Secure Communication Protocols for Ad Hoc Networks

- 1 Integration of Secure In-network Aggregation and System Monitoring for Wireless Sensor Networks**
Bo Sun, Xing Jin, Lamar University, USA; Kui Wu, University of Victoria, Canada; Yang Xiao, University of Alabama, USA
- 2 Resilient Aggregation Scheme for Confidential Sensor Reports**
Tieyan Li, Yongdong Wu, Institute for Infocomm Research, Singapore
- 3 SAMcast—A Scalable, Secure and Authenticated Multicast Protocol for Large Scale P2P Networks**
Waseem Ahmad, Ashfaq Khokhar, University of Illinois at Chicago, USA
- 4 Secure Aggregation in Sensor Networks Using Neighborhood Watch**
Paul Rabinovich, Robert Simon, George Mason University, USA
- 5 Mobility Support for Geo-encryption**
Omar Al-Ibrahim, Ala Al-Fuqaha, Doug Van Dyk, Nolen Akerman, Western Michigan University, USA



6 A Novel k -Parent Flooding Tree for Secure and Reliable Broadcasting in Sensor Networks

Avinash Srinivasan, Jie Wu, Florida Atlantic University, USA

Wednesday, 27 June 2007 2:00pm - 3:40pm Carron 2

CCN10: Web Security I

1 Light-weight Fair-dealing Infrastructures (FADIS) for M-commerce

Huafei Zhu, Feng Bao, Institute for Infocomm Research, Singapore

2 An Architecture for Network Layer Privacy

Marcelo Bagnulo, Alberto García-Martínez, Arturo Azcorra, University Carlos III of Madrid, Spain

3 Filtering Spam Email Based on Retry Patterns

Peter Lieven, Björn Scheuermann, Michael Stini, Martin Mauve, Heinrich Heine University, Germany

4 Price Negotiation Systems for M-commerce

Huafei Zhu, Feng Bao, A Lakshminarayanan, Institute for Infocomm Research, Singapore

5 IPSec: Performance Analysis and Enhancements

Craig A. Shue, Minaxi Gupta, Steven A. Myers, Indiana University, USA

6 A Memory Unit for Priority Management in IPSec Accelerators

Luigi Dadda, University of Lugano, Switzerland; Politecnico di Milano, Italy; Alberto Ferrante, University of Lugano, Switzerland; Marco Macchetti, C.E.C., Italy

Wednesday, 27 June 2007 4:00pm - 5:40pm Carron 2

CCN11: Web Security II

1 Secure Vehicular Communications Based on Group Signature and ID-based Signature Scheme

Xiaoting Sun, Xiaodong Lin, Pin-Han Ho, University of Waterloo, Canada

2 Mesh Network Firewalling with Bloom Filters

Leonardo Maccari, Romano Fantacci, University of Florence, Italy; P. Neira, R. M. Gasca, University of Sevilla, Spain

3 A Secure Authentication Policy for UMTS and WLAN Interworking

Yen-Chieh Ouyang, Chang-Bu Jang, Hung-Ta Chen, National Chung Hsing University, ROC

4 Wireless Intrusion Detection Using Tracking Verification

Robert A. Malaney, The University of New South Wales, Australia

5 A Robust Kolmogorov-Smirnov Detector for Misbehavior in IEEE 802.11 DCF

Alberto Lopez Toledo, Xiaodong Wang, Columbia University, USA

6 SFRIC: A Secure Fast Roaming Scheme in Wireless LAN using ID-based Cryptography

Yoohwan Kim, Wei Ren, Ju-Yeon Jo, Mei Yang, Yingtao Jiang, University of Nevada at Las Vegas, USA; Jun Zheng, City University of New York, USA

Multimedia Communications and Home Services Symposium

Tuesday, 26 June 2007 2:00pm - 3:40pm SECC Hall 2

MCH01P: Multimedia Communications and Home Services Symposium Poster Session

1 The Impact of Avatar Mobility on Distributed Server Assignment for Delivering Mobile Immersive Communication Environment

Ying Peng Que, Farzad Safaei, Paul Boustead, University of Wollongong, Australia

2 A Session-initiation-protocol-based Middleware for Multi-application Management

Teodora Guenkova-Luy, Holger Schmidt, Andreas Schorr, Franz J. Hauck, University Ulm, Germany; Andreas Kassler, Karlstad University, Sweden

3 Towards Sender-based TFRC

Guillaume Jourjon, University of New South Wales, Australia; Université de Toulouse, France; Emmanuel Lochin, National ICT Australia Ltd., Australia; Patrick Sénac, ENSICA, France; Université de Toulouse, France

4 A Support System for Designing Ubiquitous Service Composition Scenarios

Takaaki Moriya, Hiroyuki Ohnishi, Makoto Yoshida, Takeshi Ogawa, Miki Hirano, Nippon Telegraph and Telephone Corporation, Japan

5 A Low Complexity Image Quality Metric for Real-time Open-loop Transcoding Architectures

C. Goudemand, M. G. Gazelet, F.-X. Coudoux, P. Corlay, M. Gharbi, University of Valenciennes, France

6 Optimizing Multiplayer Gaming Protocols for Heterogeneous Network Environment

Zsolt Kenei, Ericsson Hungary Ltd., Hungary; Gábor Kiss, János Levendovszky, Sándor Molnár, Budapest University of Technology and Economics, Hungary

7 Traffic Analysis and Modeling for World of Warcraft

Philipp Svoboda, Wolfgang Karner, Markus Rupp, Vienna University of Technology, Austria

8 Optimal Packet Scheduling for Multi-description Multipath Video Streaming over Wireless Networks

Gui Xie, M. N. S. Swamy, M. Omair Ahmad, Concordia University, Canada

9 VoIP Capacity Allocation Using an Adaptive Voice Packetization Server in IEEE 802.11 WLANs

Ahmad M. Kholaf, Terence D. Todd, McMaster University, Canada

Tuesday, 26 June 2007 4:00pm - 5:40pm Castle 3

MCH02: Multicast/Broadcast

1 Efficient Multimedia Multicast Using Distributed Source Coding

Vladimir Stanković, Lancaster University, UK; Yang Yang, Zixiang Xiong, Texas A&M University, USA

2 On Supporting Robust Voice Multicasting over Ad hoc Wireless Networks

G. Venkat Raju, Yahoo! Software Development India Pvt. Ltd., India; T. Bheemarjuna Reddy, C. Siva Ram Murthy, Indian Institute of Technology at Madras, India

3 Quality Incentive Assisted Congestion Control for Receiver-driven Multicast

Stian Johansen, Anna N. Kim, Andrew Perkis, Norwegian University of Science and Technology, Norway

4 A Near Optimal Localized Heuristic for Voice Multicasting over Ad hoc Wireless Networks

G. Venkat Raju, Yahoo! Software Development India Pvt. Ltd., India; T. Bheemarjuna Reddy, C. Siva Ram Murthy, Indian Institute of Technology at Madras, India

5 Multiplexing Video on Broadcast Channels via Convex Programs

Raju Hormis, Columbia University, USA; Elliot Linzer, Ambarella Corporation, USA; Xiaodong Wang, Columbia University, USA

6 Adaptive Error-resilience Transcoding and Fairness Grouping for Video Multicast over Wireless Networks

Chih-Ming Chen, National Tsing Hua University, ROC; Chunghwa Telecom Co., Ltd.; Chia-Wen Lin, National Chung Cheng Uni., ROC; Yung-Chang Chen, National Tsing Hua University, ROC

Wednesday, 27 June 2007 9:00 - 10:40am Castle 3

MCH03: Peer-to-Peer Streaming

1 Truthful Streaming in Selfish DONet

Dan Li, Jianping Wu, Yong Cui, Tsinghua University, PRC



- 2 **Efficient Placement Schemes to Fully Utilize Peer Upstream Bandwidth**
Vicky Zeng, Yingfei Dong, University of Hawaii, USA
- 3 **On Ameliorating the Perceived Playout Quality in Chunk-driven P2P Media Streaming Systems**
Marco Furini, University of Piemonte Orientale, Italy
- 4 **Hybrid Protocol for Application Level Multicast for Live Video Streaming**
Chai Kiat Yeo, Bu Sung Lee, Meng Hwa Er, Nanyang Technological University, Singapore
- 5 **A Peer-to-Peer Approach for Remote Rendering and Image Streaming in Walkthrough Applications**
Azzedine Boukerche, Richard Werner Nelem Pazzi, University of Ottawa, Canada
- 6 **Supporting VCR Functions in P2P VoD Services Using Ring-assisted Overlays**
Bin Cheng, Hai Jin, Xiaofei Liao, Huazhong University of Science and Technology, China

Wednesday, 27 June 2007 11:00am - 12:40pm Castle 3

MCH04: Overlay Networks

- 1 **A Distributed Approach to End-to-End Network Topology Inference**
Xing Jin, Qiuyan Xia, S.-H. Gary Chan, The Hong Kong University of Science and Technology, PRC
- 2 **Probabilistic Search in P2P Networks with High Node Degree Variation**
Haoxiang Zhang, Lin Zhang, Xiuming Shan, Tsinghua University, PRC; Victor O. K. Li, Tsinghua University, PRC
- 3 **An Experiment Study on Cheating and Anti-cheating in Gossip-based Protocol**
Yun Tang, Nan Zhang, Yuanchun Shi, Shiqiang Yang, Yuzhuo Zhong, Tsinghua University, PRC; University of Hong Kong, PRC
- 4 **A Fast Broadcast Tree Construction in Multi-rate Wireless Mesh Networks**
Tai Wang, Xu Du, Wenqing Cheng, Zongkai Yang, Wei Liu, Huazhong University of Science and Technology, China
- 5 **Scalable Maintenance for Strong Web Consistency in Dynamic Content Delivery Overlays**
Zhou Su, Jiro Katto, Yasuhiko Yasuda, Waseda University, Japan
- 6 **Maximizing Throughput in Layered Peer-to-Peer Streaming**
Liang Dai, Yi Cui, Yuan Xue, Vanderbilt University, USA

Wednesday, 27 June 2007 2:00pm - 3:40pm Castle 3

MCH05: Wireless Multimedia

- 1 **An Experimental Investigation of Parallel Multimedia Streams over IEEE 802.11e WLAN Networks using TXOP**
Nicola Cranley, Tanmoy Debnath, Mark Davis, Dublin Institute of Technology, Ireland

- 2 **Joint Capacity, Flow and Rate Allocation for Multiuser Video Streaming over Wireless Ad Hoc Networks**
Sachin Adlaka, Xiaoqing Zhu, Bernd Girod, Andrea J. Goldsmith, Stanford University, USA
- 3 **Utility-based Resource Allocation for Layer-encoded IPTV Multicast in IEEE 802.16 (WiMAX) Wireless Networks**
Wen-Hsing Kuo, Tehuang Liu, Wanjiun Liao, National Taiwan University, ROC
- 4 **Scalable Video Transmission over the IEEE 802.11e Networks Using Cross-Layer Rate Control**
Chuan Heng Foh, Yu Zhang, Zefeng Ni, Jianfei Cai, Nanyang Technological University, Singapore
- 5 **Extension and Application of the Network Utilization Characteristic Metric to IEEE 802.11e**
Rosario G. Garroppo, Luca Tavanti, Stefano Lucetti, Stefano Giordano, Università di Pisa, Italy
- 6 **Window-based Rate Control Approach for Video Streaming over Wireless Networks**
Maria Teresa Carta, Tatiana Onali, Luigi Atzori, University of Cagliari, Italy

Wednesday, 27 June 2007 4:00pm - 5:40pm Castle 3

MCH06: Error Control and Recovery

- 1 **LPRE: Lost Speech Packet Recovery with Enhancement**
Hossein Ajorloo, Sharif University of Technology, Iran; Iran Telecommunication Research Center, Iran; M.-T. Manzuri-Shalmani, Sharif University of Technology, Iran; IPM School of Computer Science, Iran
- 2 **Turbo codes -based Image Transmission for Channels with both Random Errors and Packet Loss**
Lei Yao, Lei Cao, The University of Mississippi, USA
- 3 **Low-latency Error Control of H.264 Using SP-frames and Streaming Agent over Wireless Networks**
Gene Cheung, Hewlett-Packard Laboratories Japan, Japan; Wai-tian Tan, Hewlett-Packard Laboratories Palo Alto, USA
- 4 **Interactive Error Control for Mobile Video Telephony**
Waqar Zia, Tauseef Afzal, Technische Universität München, Germany; Wen Xu, Infineon Technologies AG, Germany; Guenther Liebl, Thomas Stockhammer, Nomor Research GmbH, Germany
- 5 **Error Prediction Based Redundancy Control for Robust Transmission of Video over Wireless Links**
Olivia Nemethova, Wolfgang Karner, Markus Rupp, Vienna University of Technology, Austria
- 6 **Lightweight Piggybacking for Packet Loss Recovery in Internet Telephony**
Wing-Yan Chow, Yiu-Wing Leung, Hong Kong Baptist University, PRC

Network Services and Operation Symposium

Tuesday, 26 June 2007 9:00 - 10:40am Castle 2

NS001: Mobile Networks

- 1 **A Mobility Scheme for Personal and Terminal Mobility**
Bu-Sung Lee, Teck Meng Lim, Chai Kiat Yeo, Quang Vinh Le, Nanyang Technological University, Singapore
- 2 **Performance Analysis of Offloading Systems in Mobile Wireless Environments**
Shumao Ou, Kun Yang, Antonio Liotta, University of Essex, UK; Liang Hu, Jilin University, PRC
- 3 **Load Balancing in Mobile IPv6's Correspondent Networks with Mobility Agents**
Albert Cabellos-Aparicio, Jordi Domingo Pascual, Universitat Politècnica de Catalunya, Spain

- 4 **Dynamic Interactive Multimedia Scenes in Mobile Broadcast Environments**
Ahmed Younus, Technische Universität München, Germany; Wissam Abdel Samad, Thomas Stockhammer, Nomor Research, Germany; Waqar Zia, Technische Universität München, Germany; Wen Xu, Infineon, Germany
- 5 **MobiSplit in a Virtualized, Multi-device Environment**
Julien Abeillé, NEC Network Laboratories, Germany; Rui L. Aguiar, Universidade de Santiago, Portugal; Joao Girao, Telemaco Melia, NEC Network Laboratories, Germany; Ignacio Soto, Universidad Carlos III de Madrid, Spain; Patrick Stupar, Telecom Italia, Italy
- 6 **Peer-to-Peer Vertical Mobility Management**
Ramy Farha, Khashayar Khavari, Alberto Leon-Garcia, University of Toronto, Canada



Tuesday, 26 June 2007 11:00am - 12:40pm Castle 2

NS002: Peer-to-Peer Networking

1 Overlay Partition: Iterative Detection and Proactive Recovery

Tongqing Qiu, Nanjing University, China; City University of Hong Kong, PRC; Edward Chan, City University of Hong Kong, PRC; Guihai Chen, Nanjing University, China

2 Decentralized Clustering in Pure P2P Overlay Networks Using Schelling's Model

Atul Singh, Mads Haahr, Trinity College Dublin, Ireland

3 Efficient Support for Similarity Searches in DHT-based Peer-to-Peer Systems

Jun Gao, Riverbed Technology, Inc., USA; Peter Steenkiste, Carnegie Mellon University, USA

4 LiPS: Efficient P2P Search Scheme with Novel Link Prediction Techniques

Yaodong Zhang, Shanghai Jiao Tong University, PRC; Guobin Shen, Microsoft Research Asia, China; Yong Yu, Shanghai Jiao Tong University, PRC

5 Skip Tree Graph: A Distributed and Balanced Search Tree for Peer-to-Peer Networks

Alejandra González Beltrán, Paul Sage, Peter Milligan, Queen's University Belfast, UK

6 Hierarchical and Breathing Peer-to-Peer SIP System

Lifeng Le, Beijing University of Posts and Telecommunications, PRC; Geng-Sheng Kuo, National Chengchi University, ROC

Tuesday, 26 June 2007 4:00pm - 5:40pm SECC Hall 2

NS003P: Network Services and Operations Symposium Poster Session

1 Performance Measurement, Evaluation and Analysis of Push-to-Talk in 3G Networks

Wei-Peng Chen, Steven Licking, Fujitsu Labs of America, Inc., USA; Takashi Ohno, Satoshi Okuyama, Fujitsu Labs. Ltd., Japan; Takeo Hamada, Fujitsu Labs of America, Inc., USA

2 The SILO Architecture for Services Integration, Control, and Optimization for the Future Internet

Rudra Dutta, George N. Rouskas, North Carolina State University, USA; Ilia Baldine, Renaissance Computing Institute, USA; Arnold Bragg, Dan Stevenson, RTI International, USA

3 TCP Dynamics in 802.11 Wireless Local Area Networks

Sumathi Gopal, Sanjoy Paul, Rutgers University, USA

4 TDM Emulation in Packet-switched Networks

George N. Rouskas, Nikhil Baradwaj, North Carolina State University, USA

5 Secure Bootstrapping of Distributed Hash Tables in Dynamic Wireless Networks

L. Cheng, K. Jean, R. Ocampo, A. Galis, University College London, UK; P. Kersch, R. Szabo, Budapest University of Technology and Economics, Hungary

6 An Improved TCP Migrate Scheme with DNS Handover Assistant for End-to-End Mobility

Yi Wu, Yanqun Le, Dongmei Zhang, Nokia Research Center, China

7 Multi-device Seamless Service by User-oriented Session in All-IP Network

Naoki Imai, Manabu Isomura, Hiroki Horiuchi, KDDI R&D Laboratories Inc., Japan

8 A Markov Model for the EpiChord Peer-to-Peer Overlay in an XCAST-enabled Network

Mario Kolberg, University of Stirling, UK; Florence Kolberg, University of Strathclyde, UK; Alan Brown, University of Stirling, UK; John Buford, Avaya Labs, USA

9 Evaluating the Performance of Web Services

Composition for Network Management

Ricardo Lemos Vianna, Maria Janilce Bosquiroli Almeida, Liane Margarida Rockenbach Tarouco, Lisandro Zambenedetti Granville, Federal University of Rio Grande do Sul, Brazil

10 Automatically Segregating Greedy and Malicious Internet Flows

José Carlos Brustoloni, University of Pittsburgh, USA; Shuo Chen, Microsoft Research, USA

Wednesday, 27 June 2007 9:00 - 10:40am Castle 1

NS004: Voice over IP

1 Study of Best-effort VoIP Handovers between WLAN and EVDO Networks

Amit P. Jardosh, University of California at Santa Barbara, USA; Rajeev Koodli, Tat Chan, Nokia Research Center, USA

2 Blocking Unsolicited Voice Calls Using Decoys for the IMS

S. M. Akramus Salehin, Neco Ventura, University of Cape Town, South Africa

3 Measurement and Evaluation of ENUM Server Performance

Charles Shen, Henning Schulzrinne, Columbia University, USA

4 VoIP Performance in SIP-based Vertical Handovers between WLAN and GPRS/UMTS Networks

Marc Cardenete-Suriol, Josep Mangues-Bafalluy, Marc Portoles-Comeras, Manuel Requena-Esteso, Centre Tecnològic de Telecomunicacions de Catalunya, Spain; Mónica Gorricho, France Telecom, Spain

5 Detecting SPIT Calls by Checking Human Communication Patterns

J. Quittek, S. Niccolini, S. Tartarelli, M. Stiernerling, M. Brunner, T. Ewald, NEC Europe Ltd., Germany

6 Application Composition in the SIP Servlet Environment

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

Wednesday, 27 June 2007 11:00am - 12:40pm Castle 1

NS005: Next Generation Internet Architecture

1 Can Autonomic and Strategic Routing Benefit Internet Autonomous Systems?

Carla Di Cairano-Gilfeddera, Robert Ghanea-Hercock, BT Research, UK; Sriramkrishnan Srinivasana, BT Research, UK; Royal Holloway University of London, UK

2 New Parallel Shortest Path Searching Algorithm Based on Dynamically Reconfigurable Processor DAPDNA-2

Hirofumi Ishikawa, Sho Shimizu, Yutaka Arakawa, Naoki Yamanaka, Kosuke Shiba, Keio University, Japan

3 Subspace Methods for Network Resource Reservation Coding Processes

Alexandru Murgu, British Telecom, UK

4 Toward Valley-free Inter-domain Routing

Sophie Y. Qiu, Johns Hopkins University, USA; Patrick D. McDaniel, Pennsylvania State University, USA; Fabian Monrose, Johns Hopkins University, USA

5 Real-time Detection of Link Failures in Inter Domain Routing

Xiaobo Long, Biplab Sikdar, Rensselaer Polytechnic Institute, USA

6 Inter-domain Path Computation using Improved Crankback Signaling in Label Switched Networks

Faisal Aslam, Freiburg University, Germany; Zartash Afzal Uzmi, LUMS, Pakistan; Adrian Farrel, Old Dog Consulting, UK; Michal Pióro, Warsaw University of Technology, Poland



Wednesday, 27 June 2007 2:00pm - 3:40pm Castle 1

NS006: Service-aware Networks

- 1 Enhancing the Accuracy of Position Information through Superposition of Location Server Data**
S. D. Hermann, A. Wolisz, M. Sortais, Technische Universität Berlin, Germany
- 2 Rule-based On-line Feature Interaction Detection for IMS Call Control Services**
Lina Ren, Fei Li, Qi Yu, Bo Yang, IBM China Research Lab, China
- 3 Service Delivery in Collaborative Context-aware Environments using Fuzzy Logic**
Raffaele Gialfreda, British Telecommunications plc, UK; Javier Barria, Imperial College London, UK
- 4 Scalable Local Area Service Discovery**
Richard Black, Heimur Sverrisson, Laurent Massoulié, Microsoft Research
- 5 Service Roaming over Mobile Networks: A Reality Check**
K. R. Renjith Kumar, Helsinki University of Technology, Finland
- 6 Scheduling Feed Retrieval**
Ward van Wanrooij, Aiko Pras, University of Twente, The Netherlands

Wednesday, 27 June 2007 4:00pm - 5:40pm Castle 1

NS007: Context and Revenue Management

- 1 A Distributed Scheme for Responsive Network Engineering**
J. Göbel, University of Hamburg, Germany; A. E. Krzesinski, D. Stapelberg, University of Stellenbosch, South Africa
- 2 Dynamic Revenue Management for Flows in Packet Networks**
Grigorios Zachariadis, ; Javier Barria, Imperial College London, UK
- 3 Optimal Pricing for Selfish Users and Prefetching in Heterogeneous Wireless Networks**
Jonathan Y. Lau, Ben Liang, University of Toronto, Canada
- 4 A Policy-based Approach for Managing Ubiquitous Networks in Urban Spaces**
Antonios M. Hadjiantonis, ; Marinou Charalambides, ; George Pavlou, University of Surrey, UK
- 5 Ontology-based Reasoning for Supporting Context-aware Services on Autonomic Networks**
J. Martín Serrano, Joan Serrat, Universitat Politècnica de Catalunya, Spain; John Strassner, Motorola Labs, USA
- 6 On the Performance of the AAA Systems in 3G Cellular Networks**
Said Zaghloul, Admela Jukan, University of Quebec, Canada

Optical Networks and Systems Symposium

Monday, 25 June 2007 2:00 - 3:40pm Boisdale 2

ONS01: OCDMA

- 1 Quadratic-congruence Carrier-hopping Prime Code for Multicode-keying Optical CDMA**
Wing C. Kwong, Hofstra University, USA; Cheng-Yuan Chang, Hung-Ta Chen, Guu-Chang Yang, National Chung-Hsing University, ROC
- 2 Hybrid Power/Overlap Allocation Scheme for a Multirate Overlapped Optical CDMA System**
Robert Raad, Laval University, Canada; Elie Inaty, University of Balamand, Lebanon; Paul Fortier, Laval University, Canada; Hossam M. H. Shalaby, University of Alexandria, Egypt
- 3 Orthogonal En/Decoders for Truly Asynchronous Spectral Amplitude Encoded OCDMA**
B. Huiszoon, L. Bakker, H. de Waardt, G. D. Khoe, E. R. Fledderus, A. M. J. Koonen, Eindhoven University of Technology, Netherlands
- 4 Channel Capacity of IM/DD Optical Communication Systems and of ACO-OFDM**
Xia Li, R. Mardlin, J. Armstrong, Monash University, Australia
- 5 Time-and-Frequency-hopping Optical Orthogonal Codes with Hierarchical Cross-correlation Constraints for Service Differentiation**
Chung-Keun Lee, Samsung Electronics, Korea; Seung-Woo Seo, Seoul National University, Korea
- 6 Optical Impulse Modulation for Diffuse Indoor Wireless Optical Channels**
Mohamed D. A. Mohamed, Steve Hranilovic, McMaster University, Canada

Monday, 25 June 2007 4:00 - 5:40pm Boisdale 2

ONS02: Passive Optical Networks

- 1 iOPEN Network: Operation Mechanisms and Experimental Study**
Luying Zhou, Xu Shao, Teck Yoong Chai, Chava Vijaya Saradhi, Yixin Wang, Institute for Infocomm Research, Singapore
- 2 Radio-over-Fiber Transmission of 1.25-Gigabit Ethernet Signal on 60-GHz Band Subcarrier with Performance Improvement and Wavelength Reuse**
M.-T. Zhou, NICT, Singapore; Q. J. Wang, Nanyang Technological University, Singapore; B. Luo, L. C. Ong, M. L. Yee, Institute for

Infocomm Research, Singapore; Y. Zhang, Singapore Institute of Manufacturing Technology, Singapore; Y. C. Soh, Nanyang Technological University, Singapore; M. Fujise, NICT, Singapore

- 3 Hierarchical Weighted Round Robin EPON DBA Scheme and Its Comparison with Cyclic Water-filling Algorithm**
Chan Kim, Tae-Whan Yoo, Bong-Tae Kim, ETRI, Korea
- 4 Admission Control in Ethernet Passive Optical Networks (EPONs)**
Ahmad R. Dhaini, Chadi M. Assi, Concordia University, Canada; Martin Maier, Institut National de la Recherche Scientifique University of Quebec, Canada; Abdallah Shami, University of Western Ontario, Canada
- 5 IPACT with Smallest Available Report First: A New DBA Algorithm for EPON**
Swapnil Bhatia, Radim Bartoš, University of New Hampshire, USA
- 6 Just-in-Time Online Scheduling for WDM EPONs**
Michael P. McGarry, Martin Reisslein, Charles J. Colbourn, Arizona State University, USA; Martin Maier, Institut National de la Recherche Scientifique, Canada

Tuesday, 26 June 2007 9:00 - 10:40am Castle 3

ONS03: Protection and Restoration I

- 1 Providing Differentiated Quality-of-Protection for Surviving Double-link Failures in WDM Mesh Networks**
Xu Shao, Luying Zhou, Institute for Infocomm Research, Singapore; Weiguo Zheng, Tsinghua University, PRC; Yixin Wang, Institute for Infocomm Research, Singapore
- 2 Availability-constrained Shared Backup Path Protection (SBPP) for GMPLS-based Spare Capacity Reprovisioning**
Qi Guo, Pin-Han Ho, University of Waterloo, Canada; University of Ottawa, Canada; Anwar Haque, Bell Canada, Canada; Hussein T. Mouftah, University of Ottawa, Canada
- 3 Weighted Fairness in Resilient Packet Rings**
Mete Yilmaz, Cisco Systems, USA; Nirwan Ansari, New Jersey Institute of Technology, USA
- 4 Most Reliable Routing in WDM Mesh Networks with Arbitrary Risk Distribution**
Ji Li, Kwan L. Yeung, The University of Hong Kong, PRC

**5 p-Cycle Network Design for Specified Minimum Dual-failure Restorability**

Wei Li, University of Alberta, Canada; John Doucette, University of Alberta, Canada; TRILabs, Canada; Ming Zuo, University of Alberta, Canada

6 gStreams: A New Technique for Fast Recovery with Capacity Efficient Protection in WDM Mesh Networks

Arunabha Sen, Sudheendra Murthy, Arizona State University, USA; Subir Bandyopadhyay, University of Windsor, Canada

Tuesday, 26 June 2007 11:00am - 12:40pm Castle 3

ONS04: Protection and Restoration II**1 Comparison of Protection Mechanisms: Capacity Efficiency and Recovery Time**

Wensheng He, Arun K. Somani, Iowa State University, USA

2 1+N Protection against Multiple Link Failures in Mesh Networks

Ahmed E. Kamal, Iowa State University, USA

3 A Delay-constrained Shared Mesh Restoration Scheme

Hassan Naser, Ming Gong, Lakehead University, Canada

4 A New ILP-based p-Cycle Construction Algorithm without Candidate Cycle Enumeration

Bin Wu, Kwan L. Yeung, King-Shan Lui, The University of Hong Kong, PRC; Shizhong Xu, University of Electronic Science and Technology of China, PRC

5 Using Resource Pools for Pre-signaled Restoration LSP in ASON Networks

Florence Kolberg, David Harle, University of Strathclyde, UK

6 Service Level Agreement Framework for Differentiated Survivability in GMPLS-based IP-over-Optical Networks

David Harle, Saud Albarrak, Faeed Ali, University of Strathclyde, UK; Anna Urrea, Eusebi Calle, Jose L. Marzo, University of Girona, Spain

Tuesday, 26 June 2007 2:00pm - 3:40pm Castle 3

ONS05: Optical Switching**1 An Ultrafast with High Contrast Ratio 1x2 All-optical Switch Based on Tri-arm Mach-Zehnder Employing All-optical Flip-Flop**

H. Le Minh, Z. Ghassemlooy, Wai Pang Ng, Northumbria University, UK

2 A Cost-effective Approach to Optical Packet/Burst Scheduling

F. Callegati, A. Campi, W. Cerroni, University of Bologna, Italy

3 Scalable Switching Testbed not "Stopping" the Serial Bit Stream

D. Agrawal, O M. Baldi, Politecnico di Torino, Italy; M. Corrà, TRETEC S.r.l., Italy; G. Fontana, University of Trento, Italy; G. Marchetto, Politecnico di Torino, Italy; V. T. Nguyen, Y. Ofek, D. Severina, T. H. Truong, O. Zadedyurina, University of Trento, Italy

4 Impact of Edge Traffic Aggregation on the Performance of FDL-assisted Optical Core Switching Nodes

Ahmad Rostami, Adam Wolisz, Technical University of Berlin, Germany

5 Multiple-input Buffer and Shared Buffer Architectures for Asynchronous Optical Burst Switching Networks

Konstantinos Yiannopoulos, Emmanouel Varvarigos, Kyriakos Vlachos, University of Patras, Greece

6 A Real-time Hardware-based Scheduler for Next-Generation Optical Burst Switches

M. T. Anan, G. M. Chaudhry, University of Missouri-Kansas City, USA

Tuesday, 26 June 2007 4:00pm - 5:40pm SECC Hall 2

ONS06P: Optical Networks and Systems Symposium Poster Session**1 On the Bandwidth Efficiency of Pre-crossconnected Trails**

Eric D. Manley, Haitham S. Hamza, Jitender S. Deogun, University of Nebraska at Lincoln, USA

2 Optical WDM Network Planning Using Heterogeneous Multi-granularity OXCs

Hong-Hsu Yen, Shih-Hsin University, ROC; Frank Y. S. Lin, National Taiwan University, ROC; Steven S. W. Lee, Industrial Technology Research Institute, ROC; Hsiao-Tse Chang, National Taiwan University, ROC; Biswanath Mukherjee, University of California-Davis, USA

3 An Anycast Routing Scheme for Supporting Emerging Grid Computing Applications in OBS Networks

Kejie Lu, University of Puerto Rico at Mayagüez, Puerto Rico; Tao Zhang, Ayat Jafari, New York Institute of Technology, USA

4 Modelling Errors in Long-haul Optical Fiber Transmission Systems by using Instantons and Edgeworth Expansion

Miloš Ivković, Ivan Djordjević, The University of Arizona, USA; Predrag Rajković, University of Niš, Serbia; Bane Vasić, The University of Arizona, USA

5 An Analytical Model for Wavelength-convertible Optical Networks

Rajalakshmi Pachamuthu, Ashok Jhunjhunwala, Indian Institute of Technology-Madras, India

6 Analysis of RSVP-TE Graceful Restart

O. Komolafe, J. Sventek, University of Glasgow, UK

7 A Novel Graph Model for Maximum Survivability in Mesh Networks under Multiple Generic Risks

Qingya She, Xiaodong Huang, Jason P. Jue, The University of Texas at Dallas, USA

8 QoS-aware Wavelength Assignment with BER and Latency Guarantees for Crosstalk Limited Networks

Jun He, Maité Brandt-Pearce, Charles L. Brown, University of Virginia, USA; Suresh Subramaniam, The George Washington University, USA

9 Performance of Dedicated Path Protection in Transmission-impaired DWDM Networks

Yuxiang Zhai, The George Washington University, USA; Yvan Pointurier, University of Virginia, USA; Suresh Subramaniam, The George Washington University, USA; Maité Brandt-Pearce, University of Virginia, USA

Wednesday, 27 June 2007 9:00 - 10:40am Dochart 2

ONS07: OPS/OBS**1 Multi-metaRing Protocol: Fairness in Optical Packet Ring Networks**

Andrea Bianco, Davide Cuda, Jorge Finochietto, Fabio Neri, Politecnico di Torino, Italy

2 Manycasting over Optical Burst-switched Networks

Xiaodong Huang, Qingya She, The University of Texas at Dallas, USA; Vinod M. Vokkarane, University of Massachusetts, USA; Jason P. Jue, The University of Texas at Dallas, USA

3 Virtual Topology Design for OBS Optical Networks

Bin Wu, Kwan L. Yeung, The University of Hong Kong, PRC

4 TCP Window-based Dynamic Assembly Period in Optical Burst Switching Network

Shuping Peng, Zhengbin Li, Xinlei Wu, Anshi Xu, Peking University, PRC

5 Minimizing the Number of Wavelength Converters in Optical-burst Switched Networks

João Pedro, Siemens Networks S.A., Portugal; Instituto Superior Técnico, Portugal; Paulo Monteiro, Siemens Networks S.A., Portugal; Universidade de Aveiro, Portugal; João Pires, Instituto Superior Técnico, Portugal



6 An Adaptive Reinforcement Learning-based Approach to Reduce Blocking Probability in Bufferless OBS Networks

Abdeltouab Belbekkouche, Abdelhakim Hafid, University of Montreal, Canada

Wednesday, 27 June 2007 11:00am - 12:40pm Dochart 2

ONS08: WDM Networks I

1 A Deadline-aware Scheduling Scheme for Wavelength Assignment in λ Grid Networks

Hiroyuki Miyagi, Masahiro Hayashitani, Daisuke Ishii, Yutaka Arakawa, Naoaki Yamanaka, Keio University, Japan

2 Traffic Analysis of Optical Networks Based on Wavelength Division Multiplexed Clockwork Routing

E. Bravi, D. Cotter, University College Cork, Ireland

3 Performance Evaluation of a Metro WDM Multi-channel Ring Network with Variable-length Packets

Bernardi Pranggono, Rashid Mehmood, Jaafar M. H. Elmirghani, University of Wales Swansea, UK

4 A Study of Lightpath Rerouting Schemes in Wavelength-routed WDM Networks

Xiaowen Chu, Tianming Bu, Hong Kong Baptist University, PRC; Xiang-yang Li, Illinois Institute of Technology, USA

5 Adaptive Wavelength Assignment Using Wavelength Spectrum Separation for Distributed Optical Networks

Jun He, Maïté Brandt-Pearce, Yvan Pointurier, University of Virginia, USA; Suresh Subramaniam, The George Washington University, USA

6 A Two-phase Approach for Dynamic Lightpath Scheduling in WDM Optical Networks

Lu Shen, University of Nebraska-Lincoln, USA; Xi Yang, University of Southern California, USA; Ajay Todimala, Byrav Ramamurthy, University of Nebraska-Lincoln, USA

Wednesday, 27 June 2007 2:00pm - 3:40pm Dochart 2

ONS09: WDM Networks II

1 A Study of Fast Flexible Bandwidth Assignment Methods and Their Blocking Probabilities for Metro Agile All-optical Ring Networks

Wei Yang, ; Sofia A. Paredes, ; Trevor J. Hall, University of Ottawa, Canada

2 Dynamic Lightpath Establishment for Service Differentiation Based on Optimal MDP Policy in All-optical Networks with Wavelength Conversion

Takuji Tachibana, Nara Institute of Science and Technology, Japan; Shoji Kasahara, Kyoto University, Japan; Kenji Sugimoto, Nara Institute of Science and Technology, Japan

3 Wavelength Assignment in Multifiber WDM Star and Spider Networks

Zhengbing Bian, Qian-Ping Gu, Simon Fraser University, Canada

4 Analytical Tool to Achieve Wavelength Conversion Performance in No Wavelength Conversion Optical WDM Networks

Rajalakshmi Pachamuthu, ; Ashok Jhunjhunwala, Indian Institute of Technology-Madras, India

5 On Control Plane for Service Provisioning in Light-trail WDM Optical Networks

Ashwin Gumaste, Janak Chandarana, Paresh Bafna, Indian Institute of Technology-Bombay, India; Nasir Ghani, Tennessee Tech University, USA; Vishal Sharma, Metanoia Inc., USA

6 Network Topology Design to Optimize Link and Switching Costs

Benjamin K. Chen, Fouad A. Tobagi, Stanford University, USA

Wednesday, 27 June 2007 4:00pm - 5:40pm Dochart 2

ONS10: Optical Wireless

1 The Free-space Optics System Using QCL: Models and Solutions

Xian Liu, University of Arkansas at Little Rock, USA

2 Optical Wireless MIMO (OMIMO) with Backward Spatial Filter (BSF) in Diffuse Channels

Daisuke Takase, Tokyo University of Science, Japan; Tomoaki Ohtsuki, Keio University, Japan

3 Adaptive Beam Clustering Optical Wireless System for an Indoor Channel

Jamal M. Alattar, Jaafar M. H. Elmirghani, Swansea University, UK

4 On the Accuracy of the Gaussian Approximation for Performance Estimation in Optical DPSK Systems with In-band Crosstalk

Luís G. C. Cancela, João J. O. Pires, Instituto Superior Técnico, Portugal

5 DARA: Delay-aware Routing Algorithm in a Hybrid Wireless-Optical Broadband Access Network (WOBAN)

Suman Sarkar, University of California-Davis, USA; Hong-Hsu Yen, Shih Hsin University, ROC; Sudhir Dixit, Nokia Research Center, USA; Biswanath Mukherjee, University of California-Davis, USA

6 Diversity Coherent Receivers for Optical Communication over the Clear Turbulent Atmosphere

Ety J. Lee, Vincent W. S. Chan, Massachusetts Institute of Technology, USA

Signal Processing for Communications Symposium

Monday, 25 June 2007 2:00 - 3:40pm Boisdale 1

SPC01: Signal Processing for Wireless Systems I

Invited Talk: Advanced Signal Processing for Future Generation Wireless Communications

Bayan Sharif, University of Newcastle, UK

1 Diversity-multiplexing Tradeoff in Cooperative Multiple Access Channels

Zhiguo Ding, T. Ratnarajah, Colin Cowan, Queen's University Belfast, UK

2 Design of Single-group Multicasting-beamformers

Raphael Hunger, David A. Schmidt, Michael Joham, Alexander Schwing, Wolfgang Utschick, Munich Uni of Tech., Germany

3 Effective Channel Shortening by Modified MSSNR Algorithm for Simplified UWB Receiver

Syed Imtiaz Husain, Jinhong Yuan, University of New South Wales, Australia; Jian Zhang, Australian National University, Australia; National ICT, Australia

4 Cluster-based Cooperative Spectrum Sensing in Cognitive Radio Systems

Chunhua Sun, Wei Zhang, Khaled Ben Letaief, The Hong Kong University of Science and Technology, PRC

Monday, 25 June 2007 4:00 - 5:40pm Boisdale 1

SPC02: MIMO II

Invited Talk: Review of Real World MIMO System Performance

Peter Grant, University of Edinburgh, UK

1 Indoor MIMO Channel Modelling with Modified Gumbel's Bivariate Exponential Expression Based on Double-directional Correlation Properties

C. M. Tan, C. M. Chin, M. L. Sim, British Telecom Asian Research Centre, Malaysia; M. A. Beach, University of Bristol, UK

2 Linear Precoding with Minimum BER Criterion for MIMO-OFDM Systems Employing ML Detection

Boonsarn Pitakdumrongkija, Kazuhiko Fukawa, Hiroshi Suzuki, Takashi Hagiwara, Tokyo Institute of Technology, Japan



3 Advanced Channel Estimation for MIMO-OFDM in Realistic Channel Conditions

Jos Akhtman, Lajos Hanzo, University of Southampton, UK

4 On the Achievable Throughput of MIMO Broadcast Channels with Finite Rate Feedback

Wei Zhang, Khaled Ben Letaief, The Hong Kong University of Science and Technology, PRC

Tuesday, 26 June 2007 9:00 - 10:40am Dochart 2

SPC03: Signal Processing for Wireless Systems II

1 Time-hopping UWB Multiuser Detection Using Adaptive Multistage Matrix Wiener Filtering Schemes

Chia-Chang Hu, National Chung Cheng University, ROC; Hsuan-Yu Lin, Telecom Technology Center, ROC; Tsung-Hsien Liu, Yong-Sheng Cheng, National Chung Cheng University, ROC

2 Data Identifiability for Data-dependent Superimposed Training

T. Whitworth, M. Ghogho, D. C. McLernon, University of Leeds, UK

3 An FPGA-based MVDR Beamformer Using Dichotomous Coordinate Descent Iterations

Jie Liu, Ben Weaver, Yuriy Zakharov, George White, University of York, UK

4 A Novel ZF Detection Scheme for Double SFBC based OFDM System in Frequency Selective Fading Channel

Chanho Yoon, Jungbo Son, Sok-kyu Lee, Electronics and Telecommunications Research Institute, Korea

5 Presteering Broadband Antenna Arrays without Using Steering Delays

Lal C. Godara, M. R. Sayyah Jahromi, The University of New South Wales, Australia

6 Cross-layer Design of Uplink Multiple-antenna Interference Cancellation for WLAN with CSMA/CA in Open Access Networks

Alexandr M. Kuzminskiy, Bell Laboratories-Alcatel-Lucent, UK; Hamid Reza Karimi, Ofcom, UK

Tuesday, 26 June 2007 9:00 - 10:40am Boisdale 1

SPC04: MIMO IV

1 Adaptive Throughput Optimization for MIMO Systems in Rayleigh Fading Channels

Younggeun Cho, Min-Sung Kim, Fouad A. Tobagi, Stanford University, USA

2 Sphere Decoder for a MIMO Multi-user MC-CDMA Uplink in Time-varying Channels

Charlotte Dumard, Thomas Zemen, Forschungszentrum Telekommunikation Wien, Austria

3 A Novel Blind Channel Estimation for CP-based MIMO OFDM Systems

Feifei Gao, Wenyuan Wu, National University of Singapore, Singapore; Yonghong Zeng, Institute for Infocomm Research, Singapore; A. Nallanathan, National University of Singapore, Singapore

4 A Scalable Wireless Channel Emulator for Broadband MIMO Systems

Hamid Eslami, Ahmed M. Eltawil, University of California-Irvine, USA

5 Low Complexity MMSE Vector Precoding Using Lattice Reduction for MIMO Systems

Feng Liu, Lingge Jiang, Chen He, Shanghai JiaoTong University, PRC

6 Efficient Training Sequence for Joint Carrier Frequency Offset and Channel Estimation for MIMO-OFDM Systems

Wu Yan, Institute for Infocomm Research, Singapore; National University of Singapore, Singapore; Samir Attallah, National

University of Singapore, Singapore; J. W. M. Bergmans, Technische Universiteit Eindhoven, The Netherlands

Tuesday, 26 June 2007 9:00 - 10:40am

SPC05P: Advanced Topics in Signal Processing

1 A New Initial Codebook Algorithm for Learning Vector Quantization

Hongsong Li, Baohua Xu, Beijing Normal University, PRC

2 A Multirate Code for Wired Local Area Networks

J. A. Peek, COLT Telecom B.V., The Netherlands; J. B. H. Peek, University of Nijmegen, The Netherlands

3 Source Controlled Modulation Scheme for Sources with Memory

Pedro M. Crespo, Estibaliz Loyo, Javier Del Ser, Craig J. Mitchell, University of Navarra, Spain

4 Representation of a CPM Modulator through a Finite-state Sequential Machine

G. Cariolaro, A. Vigato, University of Padova, Italy

5 A Novel Multistage Equalization Algorithm

Pei Xiao, Rolando Carrasco, University of Newcastle Upon Tyne, UK

6 Automatic Classification of Imperfect QAM Constellation Using Radon Transform

A. Rahim Leyman, Institute for Infocomm Research, Singapore; Xin Liu, Hari K. Garg, Yan Xin, National University of Singapore, Singapore

7 Sending Correlated Gaussian Sources over a Gaussian MAC: To Code or Not To Code

Hamid Behroozi, M. Reza Soleymani, Concordia University, Canada

8 Super-wideband SSN Suppression in High-speed Digital Communication Systems by Using Multi-via Electromagnetic Bandgap Structures

MuShui Zhang, YuShan Li, LiPing Li, Chen Jia, Xidian University, PRC

9 Hybrid Object-based Video Compression Scheme Using a Novel Content-based Automatic Segmentation Algorithm

N. A. Tsofigkas, D. Xu, I. French, University of Teesside, UK

10 Joint Source and Channel Coding for Image Transmission over Time Varying Channels

Lei Cao, The University of Mississippi, USA

11 On the Expected Complexity Analysis of a Generalized Sphere Decoding Algorithm for Underdetermined Linear Communication Systems

Ping Wang, Tho Le-Ngoc, McGill University, Canada

12 Simple Carrier Frequency Offset Estimators in Frequency Flat-fading Channels

Pakorn Ubolkosold, Gustave F. Tchere, Stefan Knedlik, Otmar Loffeld, University of Siegen, Germany

13 Channel Capacity Estimation of Digital Subscriber Lines: A Frequency Domain Approach

Carine Neus, Patrick Boets, Leo Van Biesen, Vrije Universiteit Brussel, Belgium

14 A Novel Multiple Description Scalable Speech Codec Based on Sinusoidal Model

Yue Lang, Shenghui Zhao, Jingming Kuang, Beijing Institute of Technology, PRC

15 Fast Block Jacket Transform Based on Pauli Matrices

Guihua Zeng, Shanghai Jiaotong University, PRC; Moon Ho Lee, Chonbuk National University, Korea

16 Practical Limits of Multi-tone Signaling over High-speed Backplane Electrical Links

Amir Amirkhany, Stanford University, USA; Aliazam Abbasfar, Rambus, Inc., USA; Vladimir Stojanović, Massachusetts Institute of Technology, USA; Mark A. Horowitz, Stanford University, USA



17A Two-layer Characteristic-based Rate Control

Framework for Low Delay Video Transmission

Chun-Yuan Chang, Ming-Hung Chen, Cheng-Fu Chou, National Taiwan University, ROC; Din-Yuen Chan, National Chiayi University, ROC

18 Determination of Optimal Distortion-based Protection in Progressive Image Transmission: A Heuristic Approach

Alessio Torquati, University of Genoa, Italy; Maria Fresia, Université catholique de Louvain, Belgium; Fabio Lavagetto, University of Genoa, Italy

19 Root Nyquist Pulses with an Energy Criterion

Ritesh Sood, Hong Xiao, University of California–Davis, USA

20 Applying the Balanced Capacity Concept to DSL Systems

Ali Kalakech, Jérôme Louveaux, Luc Vandendorpe, Université catholique de Louvain, Belgium

21 Comparing Different Transmission Strategies Using Turbo Codes for Nonuniform Memoryless Sources

Gilberto Titericz Jr., Siemens Ltda., Brazil; Universidade Tecnológica Federal do Paraná, Brazil; Richard Demo Souza, Universidade Tecnológica Federal do Paraná, Brazil; Javier Garcia-Frias, University of Delaware, USA; Gil I. Shamir, University of Utah, USA

22 Tensor-based Blind Channel Identification

Carlos Estêvão R. Fernandes, Gérard Favier, University of Nice Sophia Antipolis, France; João Cesar M. Mota, Federal University of Ceará, Brazil

23 Radio Channel Modelling Using Stochastic Propagation Graphs

Troels Pedersen, Bernard H. Fleury, Aalborg University, Denmark

24 Iterative MMSE Transmit and Receive Filter Design for Frequency Selective MU-MISO Systems

Ralf Bendlin, Michael Joham, Josef A. Nossek, Munich University of Technology, Germany; Yih-Fang Huang, University of Notre Dame, USA

25 Automatic Digital Signal Types Recognition Using SI-NN and HOS

Ataollah Ebrahimzadeh, Noushivani Institute of Technology, Iran; Mehrdad Ardebilipour, Khajeh Nasir Toosi University, Iran; Alireza Movahedian, Telecomm. Comp. Khorasan, Iran

26 Optimal Constellation for General Rectangular PAM/QAM with Arbitrary Code Mapping

Ning Wei, Yi Wan, Lanzhou University, PRC

27 Multiuser Discrete Bit-loading for Digital Subscriber Lines

David D. Yu, Kibeom Seong, John M. Cioffi, Stanford University, USA

28 An FPGA Implementation of Dirty Paper Precoder

Pankaj Bhagawat, Weihuang Wang, Momin Uppal, Gwan Choi, Zixiang Xiong, Texas A&M University, USA; Mark Yeary, University of Oklahoma, USA; Alan Harris, University of North Florida, USA

Tuesday, 26 June 2007 11:00am - 12:40pm Boisdale 1

SPC06: MIMO VI

1 Partial and Analog Feedback for MISO Precoding Systems

Didier Le Ruyet, Berna Özbek, Izmir Institute of Technology, Turkey

2 On the Performance of MIMO Spatial Multiplexing Relay Channels

Yijia Fan, John S. Thompson, The University of Edinburgh, UK

3 A Two-dimensional Linear Pre-transformed (2DLPT) MIMO-OFDM System

Sumei Sun, Yan Wu, Tjeng Thiang Tjhung, Institute for Infocomm Research, Singapore

4 Throughput Performance of Pre-coding MIMO Transmission with Multi-beam Selection

Hiroyuki Seki, Masafumi Tsutsui, Fujitsu Laboratories Ltd., Japan

5 Efficient Power Minimization for MIMO Broadcast Channels with BD-GMD

Winston W. L. Ho, Ying-Chang Liang, Institute for Infocomm Research, Singapore

6 Linear Precoding for Multiuser MIMO-OFDM Systems

Hassen Karaa, Raviraj S. Adve, Adam J. Tenenbaum, University of Toronto, Canada

Tuesday, 26 June 2007 11:00am - 12:40pm Dochart 2

SPC07: CDMA III

1 Single-carrier FDMA versus Cyclic-prefix CDMA

François Horlin, Université Libre de Bruxelles, Belgium; André Bourdoux, Eduardo Lopez-Estraviz, Liesbet Van der Perre, Interuniversity Micro-Electronics Center, Belgium

2 Adaptive Space-Time Reduced-rank Interference Suppression for Asynchronous DS-CDMA Based on a Diversity-combined Decimation and Interpolation Scheme

Rodrigo C. de Lamare, University of York, UK; Raimundo Sampaio-Neto, CETUC/PUC-RIO, Brazil

3 A Simple Multistage Multiuser Receiver for UMTS-CDMA Systems

Mohsen Ghotbi, PSQ Technologies, Canada; Reza Sayyahi, M. Reza Soleymani, Mobile Communication Technologies, Iran; PSQ Technologies, Canada

4 MPOE Prefiltering with Statistical Channel Model for DS-CDMA Systems

G. Kannan, Mohit Garg, S. N. Merchant, U. B. Desai, Indian Institute of Technology–Bombay, India

5 A Novel Transmitter-based Selective-precoding Technique for DS/CDMA systems

C. Masouros, E. Alsusa, The University of Manchester, UK

6 CS-CDMA/CP with M-ZCZ Codes over a Multipath Fading Channel with Excess Spreads

Nalin S. Weerasinghe, Takeshi Hashimoto, University of Electro-Communications, Japan

Tuesday, 26 June 2007 2:00pm - 3:40pm Boisdale 1

SPC08: Synchronization I

1 Joint Channel Estimation and Synchronization with Inter-carrier Interference Reduction for OFDM

Hung Nguyen-Le, National University of Singapore, Singapore; Tho Le-Ngoc, McGill University, Canada; Chi Chung Ko, National University of Singapore, Singapore

2 Joint Iterative Transmitter and Receiver Phase Noise Correction using Soft Information

Steffen Bittner, Wolfgang Rave, Gerhard Fettweis, Technische Universität Dresden, Germany

3 Pilot-aided Fine Synchronization for SC-FDE Systems on Multipath Fading Channels

Ping-Hung Chiang, Gordon Stüber, Georgia Institute of Technology, USA; Ding-Bing Lin, National Taipei University of Technology, ROC; Hsueh-Jyh Li, National Taiwan University, ROC

4 Optimal Double Correlation Filtering for Carrier Frequency Offset Estimation in MIMO OFDM

Patrick Ho Wang Fung, Institute for Infocomm Research, Singapore; Chin Keong Ho, Eindhoven University of Technology, The Netherlands

5 A Factor Graph Approach to the Iterative Detection of OFDM Signals in the Presence of Carrier Frequency Offset and Phase Noise

Filippo Zuccardi Merli, Giorgio M. Vitetta, University of Modena and Reggio Emilia, Italy



6 Low-complexity EM-based Joint CFO and IQ Imbalance Acquisition

François Horlin, Université Libre de Bruxelles, Belgium; André Bourdoux, Eduardo Lopez-Estraviz, Liesbet Van der Perre, Interuniversity Micro-Electronics Center, Belgium

Tuesday, 26 June 2007 4:00pm - 5:40pm Boisdale 1

SPC09: Synchronization II

1 Asymptotically Efficient Reduced-complexity Frequency

Offset Estimation for Uplink MIMO-OFDM Systems
Serdar Sezginer, Pascal Bianchi, L'École Supérieure d'Électricité, France

2 Subspace-based OFDM Carrier Frequency Offset Estimation in the Presence of DC Offset

Hai Lin, Takeshi Nakao, Weiming Lu, Katsumi Yamashita, Osaka Prefecture University, Japan

3 Mean Time to Lose Lock for a PLL with Loop Delay under Thermal and Phase Noise Conditions

Uri Yehuday, Ben-Zion Bobrovsky, Tel Aviv University, Israel; Jeffrey Davidson, Provigent Ltd., Israel

4 A New Approach to Frequency Acquisition in OFDM Systems with Periodic Preambles

Juan F. Sevillano, Naiara Arrue, Igone Vélez, University of Navarra, Spain

5 Code-aided ML Ambiguity Resolution

Cédric Herzet, Luc Vandendorpe, Université catholique de Louvain, Belgium

6 Non-data-aided Synchronization and Channel Estimation for Asynchronous CDMA Uplink

L. B. Thiagarajan, S. Attallah, National University of Singapore, Singapore; Hongyi Fu, Ying-Chang Liang, Institute for Infocomm Research, Singapore

Wednesday, 27 June 2007 9:00 - 10:40am Boisdale 1

SPC10: OFDM III

1 Reduced-complexity Power-efficient Wireless OFDMA using an Equally Probable CSI Quantizer

Antonio G. Marques, Universidad Rey Juan Carlos, Spain; Fadel F. Digham, Georgios B. Giannakis, University of Minnesota, USA; F. Javier Ramos, Universidad Rey Juan Carlos, Spain

2 Computing the Optimal Amount of Constellation Distortion in OFDM Systems

Alok Aggarwal, Erik R. Stauffer, Teresa H. Meng, Stanford University, USA

3 Peak to Average Power Reduction for Low-power OFDM Systems

Everest W. Huang, Gregory W. Wornell, Massachusetts Institute of Technology, USA

4 The Performance of Coded Non-coherent M-ary Orthogonal Keying based OFDM Systems in a Frequency Selective and Fast Time-varying Channel

Mohammed W. Baidas, Timothy O'Farrell, University of Leeds, UK

5 A Successive Inter-carrier Interference Reduction Algorithm for OFDM Systems

Y. H. Zhang, W.-S. Lu, T. A. Gulliver, University of Victoria, Canada

6 Alternative Symbol Representations with Radial Symmetry for PAPR Reduction in OFDM Systems

Ali A. Al-Shaikh, Jacek Ilow, Dalhousie University, Canada

Wednesday, 27 June 2007 11:00am - 12:40pm Boisdale 1

SPC11: Detection Techniques

1 Analysis of Timing Error Detectors for Orthogonal Space-Time Block Codes

Pawel A. Dmochowski, Peter J. McLane, Queen's University, Canada

2 Downlink MC-2D-CDMA over Time-variant Frequency-selective Rayleigh Fading Channels

R. Fa, B. S. Sharif, C. C. Tsimenidis, University of Newcastle upon Tyne, UK

3 Performance of Interleave Division Multiple Access Based on Minimum Mean Square Error Detection

Katsutoshi Kusume, Guido Dietl, DoCoMo Euro-labs, Germany; Wolfgang Utschick, Munich University of Technology, Germany; Gerhard Bauch, DoCoMo Euro-labs, Germany

4 Adaptive Radial Basis Function Detector for Beamforming

Sheng Chen, Khaled Labib, Rong Kang, Lajos Hanzo, University of Southampton, UK

5 Detection of Frequency-hopped Waveforms Embedded in Interference Waveforms with Noise

John Weber, Kyle Kowalske, Clark Robertson, Frank Kragh, Naval Postgraduate School, USA; Christopher Brown, affiliation not identified

6 Interference Detection in Spread Spectrum Communication Using Polynomial Phase Transform

Randa Zarifeh, Nandini Alinier, University of Hertfordshire, UK; Sridhar Krishnan, Alagan Anpalagan, Ryerson University, Canada

Wednesday, 27 June 2007 2:00pm - 3:40pm Boisdale 1

SPC12: Channel Estimation and Equalization I

1 Widely Linear Prediction for Blind Equalization

Francisco J. A. de Aquino, Centro Federal de Educação Tecnológica do Ceará, Brazil; Carlos A. F. da Rocha, Leonardo S. Resende, Universidade Federal de Santa Catarina, Brazil

2 Carrier Phase Tracking of Multimodulus Blind Equalization Algorithm Using QAM Oblong Constellations

Jenq-Tay Yuan, Lin-Wei Chang, Fu Jen Catholic University, ROC

3 Parametric Channel Estimation in Reuse-1 OFDM Systems

M. R. Raghavendra, S. Bhashyam, K. Giridhar, Indian Institute of Technology-Madras, India

4 Soft Estimation of Time-varying Frequency Selective Channels using Kalman Smoothing

Valéry Ramon, Cédric Herzet, Xavier Wautelet, Luc Vandendorpe, Université catholique de Louvain, Belgium

5 Frequency Domain Channel Estimation for OFDM Based on the Slepian Basis Expansion

Jinho Kim, Chih-Wei Wang, Wayne E. Stark, University of Michigan, USA

6 LS Channel Estimation for Mobile OFDM Communications on Time-varying Frequency-selective Fading Channels

Jia-Chin Lin, National Central University, ROC

Wednesday, 27 June 2007 4:00pm - 5:40pm Boisdale 1

SPC13: Channel Estimation and Equalization II

1 Blind Carrier Frequency Offset Estimators Based on Variance for OFDM Systems

Lu Wu, Xian-Da Zhang, Pei-Sheng Li, Tsinghua University, PRC

2 Self-interference Suppression in Doubly-selective Channel Estimation Using Superimposed Training

Shuangchi He, Jitendra K. Tugnait, Auburn University, USA

3 Adaptive Joint Estimation of Symbol Timing and Carrier Frequency Offset in OFDM Systems

Huiming Wang, Qinye Yin, Yinkuo Meng, Ke Deng, Xi'an Jiaotong University, PRC

4 Analysis and Mitigation of Doppler Rate Effect in a Multipath Channel

Ghassan Maalouli, General Dynamics, USA; Andreas Spanias, Arizona State University, USA



5 MLSE for DSTBC-OFDM Detection with Channel Estimation by Blind Linear Prediction and Subcarriers Interpolation

Seree Wanichpakdeedecha, Kazuhiko Fukawa, Hiroshi Suzuki, Satoshi Suyama, Tokyo Institute of Technology, Japan

6 Robust Statistics based Expectation-maximization Algorithm for Channel Tracking in OFDM Systems

Sheetal Kalyani, K. Giridhar, Indian Institute of Technology–Madras, India

Wireless Adhoc and Sensor Networks Symposium

Monday, 25 June 2007 2:00 - 3:40pm Alsh 1

WAS01: Localization

1 Robust Localization in Wireless Sensor Networks through the Revocation of Malicious Anchors

Satyajayant Misra, Guoliang Xue, Aviral Shrivastava, Arizona State University, USA

2 Complexity and Error Propagation of Localization Using Interferometric Ranging

Rui Huang, Gergely V. Záruba, Manfred Huber, The University of Texas at Arlington, USA

3 A Walking Beacon-assisted Localization in Wireless Sensor Networks

Bin Xiao, Hong Kong Polytechnic University, PRC; Hekang Chen, Hong Kong Polytechnic University, PRC; Fudan University, PRC; Shuigeng Zhou, Fudan University, PRC

4 A New Relaxation Labeling Architecture for Secure Localization in Sensor Networks

Chih-Chieh Geoff Chang, Wesley E. Snyder, North Carolina State University, USA; Cliff Wang, S. Army Research Office, USA

5 Secure Tracking in Sensor Networks

Chih-Chieh Geoff Chang, Wesley E. Snyder, North Carolina State University, USA; Cliff Wang, S. Army Research Office, USA

6 A Distributed Estimation Algorithm for Tracking over Wireless Sensor Networks

Alberto Speranzon, Carlo Fischione, Karl Henrik Johansson, Royal Institute of Technology, Sweden

Monday, 25 June 2007 2:00 - 3:40pm Alsh 2

WAS02: Routing I

1 Local Update-based Routing Protocol in Wireless Sensor Networks with Mobile Sinks

Guojun Wang, University of Aizu, Japan; Tian Wang, Central South University, PRC; Weijia Jia, City University of Hong Kong, PRC; Minyi Guo, Shanghai Jiao Tong University, PRC; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC; Mohsen Guizani, UAE University, United Arab Emirates

2 Personal Network Routing Protocol (PNRP) for Personal Ubiquitous Environments

Usman Javaid, France Telecom R&D, France & University of Bordeaux I, France; Djamel-Eddine Meddour, France Telecom R&D, France; Tinku Rasheed, Create-Net International Research Center, Italy; Toufik Ahmed, University of Bordeaux I, France

3 On the Effectiveness of the 2-hop Routing Strategy in Mobile Ad Hoc Networks

Michele Garetto, Università di Torino, Italy; Paolo Giaccone, Emilio Leonardi, Politecnico di Torino, Italy

4 Disruption-tolerant Routing with Scoped Propagation of Control Information

J. Boice, J. J. Garcia-Luna-Aceves, K. Obraczka, University of California–Santa Cruz, USA

5 Efficient Non-planar Routing around Dead Ends in Sparse Topologies using Random Forwarding

Paolo Casari, Michele Nati, Chiara Petrioli, University of Padova, Italy; Michele Zorzi, University of Rome “La Sapienza”, Italy

6 Power-aware 3D Position-based Routing Algorithms for Ad Hoc Networks

A. E. Abdallah, T. Fevens, J. Opatrny, Concordia University, Canada

Monday, 25 June 2007 2:00 - 3:40pm SECC Hall 2

WAS03P: Wireless Adhoc and Sensor Networks Symposium Poster Session

1 Energy Maps for Large-scale, Mobile Wireless Networks

Min Kyoung Park, Volkan Rodoplu, University of California–Santa Barbara, USA

2 On Achieving Maximum Network Lifetime Through Optimal Placement of Cluster-heads in Wireless Sensor Networks

M. Dhanaraj, C. Siva Ram Murthy, Indian Institute of Technology–Madras, India

3 Efficient Group Management for Inter-PAN Access Control

Ahmad Ahmad, Khaled Masmoudi, Hossam Afifi, Institut National des Télécommunications, France

4 A New Cooperative Strategy for Deafness Prevention in Directional Ad Hoc Networks

Andrea Munari, Francesco Rossetto, Michele Zorzi, University of Padova, Italy

5 An Efficient Method for Improving Data Collection Precision in Lifetime-adaptive Wireless Sensor Networks

Wenyu Qu, The University of Tokyo, Japan; Keqiu Li, Dalian Institute of Technology, PRC; The University of Tokyo, Japan; Masaru Kitsuregawa, Takashi Nanya, The University of Tokyo, Japan

6 A Decentralized Positioning Method for Wireless Sensor Networks Based on Weighted Interpolation

Chin-Liang Wang, Yao-Win Hong, Yu-Sheng Dai, National Tsing Hua University, ROC

7 On the Energy Efficiency of Hybrid-ARQ Protocols in Fading Channels

Igor Stanojev, Osvaldo Simeone, Yeheskel Bar-Ness, New Jersey Institute of Technology, USA; DongHo Kim, Samsung Electronics Co., Ltd., Korea

8 Energy-efficient Contention-resilient Medium Access for Wireless Sensor Networks

Yuanyuan Zhou, Muralidhar Medidi, Washington State University, USA

9 A New Energy-efficient Local Metric for Channel-aware Geographic-informed Forwarding (CAGIF) in Wireless Sensor Networks

Lili Zhang, Boon-Hee Soong, Nanyang Technological University, Singapore

10 Distributed Optimization for Utility-energy Tradeoff in Wireless Sensor Networks

Shengbin Liao, Wenqing Cheng, Wei Liu, Zongkai Yang, Yi Ding, Huazhong University of Science and Technology, PRC

11 On the Limitations of Random Sensor Placement for Distributed Signal Detection

Zhenyu Tu, Rick S. Blum, Lehigh University, USA

12 Network Lifetime Optimization by Duality Approach for Multi-source and Single-sink Topology in Wireless Sensor Networks

Hui Wang, Yuhang Yang, Shanghai Jiao Tong University, PRC; Maode Ma, Nanyang Technological University, Singapore; Xiaomin Wang, Shanghai Jiao Tong University, PRC



13 A Sampling Data Stream Algorithm for Wireless Sensor Networks

Andre L. L. de Aquino, Federal University of Minas Gerais, Brazil; Carlos M. S. Figueiredo, Eduardo F. Nakamura, Federal University of Minas Gerais, Brazil; FUCAPI, Brazil; Luciana S. Buriol, Federal University of Rio Grande do Sul, Brazil; Antonio A. F. Loureiro, Antonio Otvio Fernandes, Claudionor J. N. Coelho Jr., Federal University of Minas Gerais, Brazil

14 Decentralized Interference Aware Link Adaptation Using Busy Bursts

Alexander Tyrrell, DoCoMo Euro-Labs, Germany; Harald Haas, Jacobs University Bremen, Germany; Gunther Auer, DoCoMo Euro-Labs, Germany; Peter Omiyi, Jacobs University Bremen, Germany

15 Energy Efficiency of MIMO-based Sensor Networks with a Cooperative Node Selection Algorithm

George N. Bravos, Athanasios G. Kanatas, University of Piraeus, Greece

16 Emulating End-to-End Losses and Delays for Ad Hoc Networks

Alaa Seddik-Ghaleb, Yacine Ghamri-Doudane, Ecole Nationale Supérieure d'Informatique pour l'industrie et l'Entreprise, France; Sidi-Mohammed Senouci, France Telecom R&D, France

17 A Non-beaconing ZigBee Network Implementation and Performance Study

Magnus Armholt, Sakari Junnila, Irek Defee, Tampere University of Technology, Finland

18 Unified Link-layer API Enabling Portable Protocols and Applications for Wireless Sensor Networks

Krisakorn Rerkrai, Janne Riihijärvi, Matthias Wellens, Petri Mähönen, RWTH Aachen University, Germany

19 Relative Accuracy based Location Estimation in Wireless Ad Hoc Sensor Networks

May Wong, Intel, Inc.; Demet Aksoy, University of California-Davis, USA

20 VoIP Capacity over Multiple IEEE 802.11 WLANs

An Chan, Soung Chang Liew, The Chinese University of Hong Kong, PRC

21 AMAC: Traffic-adaptive Sensor Network MAC Protocol through Variable Duty-cycle Operations

Sang Hoon Lee, Joon Ho Park, Lynn Choi, Korea University, Korea

22 On Collaboration in a Distributed Multi-target Tracking Framework

Tolga Onel, Cem Ersoy, Hakan Deliç, Boğaziçi University, Turkey

23 Routing in ZigBee: Benefits from Exploiting the IEEE 802.15.4 Association Tree

Francesca Cuomo, Sara Della Luna, Ugo Monaco, University of Roma "La Sapienza", Italy; Tommaso Melodia, Georgia Institute of Technology, USA

24 Energy and QoS Aware Packet Forwarding in Wireless Sensor Networks

Rong Yu, Tsinghua University, PRC; Yan Zhang, Simula Research Laboratory, Norway; Zhi Sun, Shunliang Mei, Tsinghua University, PRC

25 Optimally Mapping an Iterative Channel Decoding Algorithm to a Wireless Sensor Network

Saad Bin Qaisar, Shirish Karande, Kiran Misra, Hayder Radha, Michigan State University, USA

26 Channel and Interference Analysis for Wireless Sensor Networks

F. Darbari, I. A. Glover, R. W. Stewart, University of Strathclyde, UK

27 A MAC Protocol for Maximum Stream Allocation Depending on the Number of Antennas and Received RTS Packets in MIMO Ad Hoc Networks

Motoki Shirasu, Iwao Sasase, Keio University, Japan

28 A2L: Angle to Landmarks based Method Positioning for Wireless Sensor Networks

Mustapha Boushaba, Université de Montréal, Canada; Abderrahim Benslimane, Université d'Avignon, France; Abdelhakim Hafid, Université de Montréal, Canada

29 PERD: Polynomial-based Event Region Detection in Wireless Sensor Networks

Torsha Banerjee, Demin Wang, Bin Xie, Dharma P. Agrawal, University of Cincinnati, USA

30 Delay and Power Efficient Voice Transmission over MANET

Md. Golam Kaosar, Tarek R. Sheltami, Ashraf S. Hasan Mahmoud, King Fahd University of Petroleum & Minerals, Saudi Arabia

31 Towards an Integrated Design Approach to Specknets

D. K. Arvind, The University of Edinburgh, UK; K. Elgaid, University of Glasgow, UK; T. Krauss, A. Paterson, University of St. Andrews, UK; R. Stewart, University of Strathclyde, UK; I. Thayne, University of Glasgow, UK

32 Distributed Quad-tree for Spatial Querying in Wireless Sensor Networks

Murat Demirbas, Xuming Lu, University at Buffalo, USA

Monday, 25 June 2007 4:00 - 5:40pm Alsh 2

WAS04: Routing II

1 Fairness Improvement and Efficient Rerouting in Mobile Ad Hoc Networks

Norihiro Ohata, Yongbing Zhang, University of Tsukuba, Japan; Yusheng Ji, Institute of Informatics, Japan; Xuemin Shen, University of Waterloo, Canada

2 Distributed Cooperative Routing for UWB Ad Hoc Networks

Shouhong Zhu, Kin K. Leung, Imperial College, UK

3 An Energy-efficient Routing Protocol for Networks with Cooperative Transmissions

Aylin Aksu, Ozgur Ercetin, Sabanci University, Turkey

4 An Auction-based AODV Protocol for Mobile Ad Hoc Networks with Selfish Nodes

Center Demir, Cristina Comaniciu, Stevens Institute of Technology, USA

5 Off-network Control for Scalable Routing in Very Large Sensor Networks

Tao Wu, Subir Biswas, Michigan State University, USA

6 Resource-aware and Link Quality based Routing Metric for Wireless Sensor and Actor Networks

V. Cagri Gungor, Georgia Institute of Technology, USA; Chellury Sastry, Siemens Corporate Research, USA; Zhen Song, Utah State University, USA; Ryan Integlia, Rutgers University, USA

Monday, 25 June 2007 4:00 - 5:40pm Alsh 1

WAS05: Mobile Ad Hoc Networks (MANET)

1 A New Realistic Mobility Model for Mobile Ad Hoc Networks

Ahmed E. Kamal, Iowa State University, USA; Jamal N. Al-Karaki, The Hashemite University, Jordan

2 Range-based Mobility Estimations in MANETs with Application to Link Availability Prediction

Zhuoqun Li, Lingfen Sun, Emmanuel C. Ifeakor, University of Plymouth, UK

3 Reputation-based System for Encouraging the Cooperation of Nodes in Mobile Ad Hoc Networks

Tiranuch Anantvalee, Jie Wu, Florida Atlantic University, USA

4 Enhanced Dominant Pruning-based Broadcasting in Untrusted Ad hoc Wireless Networks

Ashikur Rahman, Pawel Gburzynski, University of Alberta, Canada; Bozena Kaminska, Simon Fraser University, Canada



5 On Routing and Rate Control Strategies in Wireless Multi-hop Random Access Networks

Ju-Lan Hsu, Izhak Rubin, University of California–Los Angeles, USA

6 Using Incompletely Cooperative Game Theory in Mobile Ad Hoc Networks

Liqiang Zhao, Xidian University, PRC; Jie Zhang, University of Bedfordshire, UK; Kun Yang, University of Essex, UK; Hailin Zhang, Xidian University, PRC

Tuesday, 26 June 2007 9:00 - 10:40am Alsh 1

WAS06: Security

1 A Routing-driven Key Management Scheme for Heterogeneous Sensor Networks

Xiaojiang Du, North Dakota State University, USA; Yang Xiao, The University of Alabama, USA; Song Ci, University of Nebraska, USA; Mohsen Guizani, United Arab University, United Arab Emirates; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

2 Dynamic Optimization of Secure Mobile Sensor Networks: A Genetic Algorithm

Rahul Khanna, Intel Corporation, USA; Huaping Liu, Oregon State University, USA; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

3 Group Rekeying Schemes for Secure Group Communication in Wireless Sensor Networks

Yong Wang, Byrav Ramamurthy, University of Nebraska–Lincoln, USA

4 Detecting Node Misbehavior in Ad hoc Networks

M. Tamer Refaei, Virginia Polytechnic Institute and State University, USA; Yanxia Rong, George Washington University, USA; Luiz A. DaSilva, Virginia Polytechnic Institute and State University, USA; Hyeon-Ah Choi, George Washington University, USA

5 Providing Transparent Security Services to Sensor Networks

Hamed Soroush, Mastooreh Salajegheh, Tassos Dimitriou, Athens Information Technology, Greece

6 A Novel Key Redistribution Scheme for Wireless Sensor Networks

Chun-Fai Law, Ka-Shun Hung, Yu-Kwong Kwok, The University of Hong Kong, PRC

Tuesday, 26 June 2007 9:00 - 10:40am Alsh 2

WAS07: Cross-layer Design I

1 Cross-layer Networking for Peer Databases over Wireless Ad Hoc Communities

Evangelos Papapetrou, Efthymia Rova, Apostolos Zarras, Panos Vassiliadis, University of Ioannina, Greece

2 Power-aware MAC for Multi-hop Wireless Networks: A Cross Layer Approach

Abdorasoul Ghasemi, Karim Faez, AmirKabir University of Technology, Iran

3 A Cross-layer Data Dissemination Protocol for Energy Efficient Sink Discovery in Wireless Sensor Networks

Mudasser Iqbal, Iqbal Gondal, Laurence Dooley, Monash University, Australia

4 Utility-based Optimal Rate Allocation for Heterogeneous Wireless Multicast

Amr Mohamed, Hussein Alnuweiri, University of British Columbia, Canada

5 An Interference-aware Channel Assignment Scheme for Wireless Mesh Networks

Arunabha Sen, Sudheendra Murthy, Arizona State University, USA; Samrat Ganguly, Sudeept Bhatnagar, NEC Laboratories America, Inc., USA

6 A Cross-layer Design on the Basis of Multiple Packet Reception in Asynchronous Wireless Network

Anxin Li, Mingshu Wang, Xiangming Li, Hidetoshi Kayama, DoCoMo Beijing Communications Laboratories Co., Ltd., PRC

Tuesday, 26 June 2007 11:00am - 12:40pm Alsh 1

WAS08: Clustering

1 Load-balanced Clustering Algorithms for Wireless Sensor Networks

Chor Ping Low, Can Fang, Jim Mee Ng, Yew Hock Ang, Nanyang Technological University, Singapore

2 An Efficient Leader Election Protocol for Wireless Quasi-static Mesh Networks: Proof of Correctness

Azzedine Boukerche, Kaouthar Abrougui, University of Ottawa, Canada

3 A Clustering Algorithm to Produce Power-efficient Architecture for (N,B) -connected Ad Hoc Networks

Chih-Cheng Tseng, Kwang-Cheng Chen, National Taiwan University, ROC

4 A Hierarchical Clustering Method in Wireless Ad Hoc Sensor Networks

Y. Zhou, M. Hart, S. Vadgama, A. Rouz, Fujitsu Laboratories of Europe Ltd., UK

5 Distributed Minimum-cost Clustering Protocol for Underwater Sensor Networks (UWSNs)

Pu Wang, Cheng Li, Memorial University of Newfoundland, Canada; Jun Zheng, University of Ottawa, Canada

Tuesday, 26 June 2007 11:00am - 12:40pm Alsh 2

WAS09: Coverage

1 Maximizing Angle Coverage in Visual Sensor Networks

Kit-Yee Chow, King-Shan Lui, Edmund Y. Lam, The University of Hong Kong, PRC

2 Efficient Coverage Planning for Grid-based Wireless Sensor Networks

Glen Takahara, Kenan Xu, Hossam Hassanein, Queen's University, Canada

3 An Energy-efficient Mobile Triangulation-based Coverage Scheme

Asheq Khan, Chunming Qiao, Prachee Sharma, Satish K. Tripathi, State University of New York–Buffalo, USA

4 Redundant Coverage in Wireless Sensor Networks

Can Fang, Chor Ping Low, Nanyang Technological University, Singapore

5 Asymptotic Coverage and Detection in Randomized Scheduling Algorithm in Wireless Sensor Networks

Yang Xiao, University of Alabama, USA; Ying Zhang, Yangzhou University, PRC; Xinyu Sun, Texas A&M University, USA; Hui Chen, The University of Memphis, USA

6 Topology Reconstruction and Characterisation of Wireless Ad Hoc Networks

Jon Arnold, Defence Science and Technology Organisation, Australia; University of Adelaide, Australia; Nigel Bean, University of Adelaide, Australia; Miro Kraetzl, Defence Science and Technology Organisation, Australia; Matthew Roughan, Matthew Sorell, University of Adelaide, Australia

Tuesday, 26 June 2007 2:00pm - 3:40pm Alsh 1

WAS10: Medium Access Control (MAC) I

1 TMMAC: An Energy Efficient Multi-channel MAC Protocol for Ad Hoc Networks

Jingbin Zhang, Gang Zhou, University of Virginia, USA; Chengdu Huang, University of Illinois, USA; Sang H. Son, John A. Stankovic, University of Virginia, USA

2 Impatient Backoff Algorithm: Fairness in a Distributed Ad-Hoc MAC

Rajarshi Gupta, Qualcomm Incorporated, USA; Jean Walrand, University of California–Berkeley, USA

3 Performance Analysis of a Distributed Wireless Access Scheme

Hai Jiang†, Princeton University, USA; Ping Wang, Weihua Zhuang, University of Waterloo, Canada



4 C-MAC: An Energy-efficient MAC Scheme Using Chinese-remainder Theorem for Wireless Sensor Networks

Yuh-Shyan Chen, National Taipei University, ROC; Yun-Wei Lin, National Chung Cheng University, ROC

5 On MAC Scheduling and Packet Combination Strategies for Practical Random Network Coding

Elena Fasolo, Michele Rossi, University of Padova, Italy; Jörg Widmer, DoCoMo Euro-Labs, Germany; Michele Zorzi, University of Padova, Italy

6 A Spreading Code MAC Protocol for Multi-hop Wireless Ad Hoc Networks

Hang Su, Xi Zhang, Texas A&M University, USA

Tuesday, 26 June 2007 2:00pm - 3:40pm Alsh 2

WAS11: Multicast and Data Gathering

1 Fault-tolerant Multicast to Mobile Destinations in Sensor Networks

Xianjin Zhu, Himanshu Gupta, Stony Brook University, USA

2 Broadcasting Protocols for Multi-radio Multi-channel and Multi-rate Mesh Networks

Min Song, Jun Wang, Old Dominion University, USA; Qun Hao, Beijing Institute of Technology, PRC

3 Optimal Distributed Multicast Routing using Network Coding

Yi Cui, Yuan Xue, Vanderbilt University, USA; Klara Nahrstedt, University of Illinois at Urbana-Champaign, USA

4 Distributed Data Aggregation Using Clustered Slepian-Wolf Coding in Wireless Sensor Networks

Pu Wang, Cheng Li, Memorial University of Newfoundland, Canada; Jun Zheng, University of Ottawa, Canada

5 Minimum Energy Data Gathering in Correlated Sensor Networks with Cooperative Transmission

Laxminarayana S. Pillutla, Vikram Krishnamurthy, The University of British Columbia, Canada

6 An Energy-aware Protocol for Data Gathering Applications in Wireless Sensor Networks

Ming Liu, University of Electronic and Technology of China, PRC; Yuan Zheng, Jiannong Cao, Hong Kong Polytechnic University, PRC; Guihai Chen, Lijun Chen, Nanjing University, China; Haigang Gong, University of Electronic and Technology of China, PRC

Tuesday, 26 June 2007 4:00pm - 5:40pm Alsh 1

WAS12: Medium Access Control (MAC) II

1 CD-MAC: Cooperative Diversity MAC for Robust Communication in Wireless Ad Hoc Networks

Sangman Moh, Chosun University, Korea; Chansu Yu, Cleveland State University, USA; Seung-Min Park, Heung-Nam Kim, Electronics and Telecommunications Research Institute, Korea; Jiwon Park, Chosun University, Korea

2 Empirical Discussion on Directional MAC Protocols for Ad hoc Networks using Practice Smart Antennas

Masahiro Watanabe, ATR Adaptive Communications Research Laboratories, Japan; Hikaru Mitsuhashi, Masaki Bandai, Shizuoka University, Japan; Sadao Obana, ATR Adaptive Communications Research Laboratories, Japan; Takashi Watanabe, Shizuoka University, Japan

3 O-MAC: An Organized Energy-aware MAC Protocol for Wireless Sensor Networks

Farid Naït-Abdesselam, University of Sciences & Technologies of Lille, France; Brahim Bensaou, The Hong Kong University of Science & Technology, PRC; Thomas Soète, University of Sciences & Technologies of Lille, France; Ka-Lok Hung, The Hong Kong University of Science & Technology, PRC

4 ESPRIT-based Directional MAC Protocol for Mobile Ad Hoc Networks

Kun Liu, Walaa Hamouda, Amr Youssef, Concordia University, Canada

5 Media Access Control with Spatial Correlation for MIMO Ad Hoc Networks

Bing Wen Ke, Ying Jun Zhang, Soung Chang Liew, The Chinese University of Hong Kong, PRC

6 Efficient Distributed Medium Access Arbitration for Multi-channel Wireless Sensor Networks

Mohamed Younis, Samuel Bushra, University of Maryland-Baltimore County, USA

Tuesday, 26 June 2007 4:00pm - 5:40pm Alsh 2

WAS13: Power Control

1 Adaptive Range-based Power Control for Collision Avoidance in Wireless Ad Hoc Networks

Kuei-Ping Shih, Yen-Da Chen, Chau-Chieh Chang, Tamkang University, ROC

2 Maximal Lifetime Rate and Power Allocation for Sensor Networks with Data Distortion Constraints

James C. F. Li, Subhrakanti Dey, Jamie Evans, University of Melbourne, Australia

3 Throughput-oriented Power Control in MIMO-based Ad Hoc Networks

Mohammad Z. Siam, Marwan Krunz, The University of Arizona, USA

4 MIMO Cooperative Diversity in a Transmit Power Limited Environment

Allan J. Jardine, Steve McLaughlin, John S. Thompson, The University of Edinburgh, UK

5 Impact of Transmission Power on the Performance of UDP in Vehicular Ad Hoc Networks

Behrooz Khorashadi, Andrew Chen, Dipak Ghosal, Chen-Nee Chuah, Michael Zhang, University of California-Davis, USA

Wednesday, 27 June 2007 9:00 - 10:40am Alsh 1

WAS14: Scheduling

1 Opportunistic Link Scheduling with QoS Requirements in Wireless Ad Hoc Networks

Qing Chen, Tsinghua University, PRC; Qian Zhang, The Hong Kong University of Science and Technology, PRC; Zhisheng Niu, Tsinghua University, PRC

2 Transmission Scheduling in Sensor Networks via Directed Edge Coloring

Maggie Cheng, Li Yin, University of Missouri, USA

3 A Token-based Scheduling Scheme for WLANs and Its Performance Analysis

Ping Wang, Weihua Zhuang, University of Waterloo, Canada

4 Dynamic Programming for Scheduling a Single Route in Wireless Networks

Gyuhwan Kim, Rohit Negi, Carnegie Mellon University, USA

5 Optimal Observation Scheduling for Connected Target Coverage Problem in Wireless Sensor Networks

Qun Zhao, Mohan Gurusamy, National University of Singapore, Singapore

6 Energy-efficient Scheduling Optimization in Wireless Sensor Networks with Delay Constraints

Lin Fang, Rui J. P. de Figueiredo, University of California-Irvine, USA

Wednesday, 27 June 2007 9:00 - 10:40am Alsh 2

WAS15: Mesh Networks I

1 AR-TP: An Adaptive and Responsive Transport Protocol for Wireless Mesh Networks

Vehbi C. Gungor, Georgia Institute of Technology, USA; Pasquale Pace, Enrico Natalizio, University of Calabria, Italy

2 Min-Max Congestion in Interference-prone Wireless Mesh Networks

Sonia Waharte, Arash Farzan, Raouf Boutaba, University of Waterloo, Canada



3 Ad hoc Path: An Alternative to Backbone for Wireless Mesh Networks

Amir Esmailpour, University of Guelph, Canada; Muhammad Jaseemuddin, Ryerson University, Canada; Nidal Nasser, University of Guelph, Canada; Osama Bazan, Ryerson University, Canada

4 Quantifying the Interference Gray Zone in Wireless Networks: A Measurement Study

Wonho Kim, Jeongkeun Lee, Taekyoung Kwon, Seoul National University, Korea; Sung-Ju Lee, Hewlett-Packard Labs, USA; Yanghee Choi, Seoul National University, Korea

5 Receiver Sense Multiple Access Protocol for Wireless Mesh Access Networks

Feiyi Huang, Yang Yang, University College London, UK; Xiaodong Zhang, Shanghai Research Centre for Wireless, PRC

6 Partially Overlapped Channel Assignment for Multi-channel Wireless Mesh Networks

A. Hamed Mohsenian Rad, Vincent W. S. Wong, The University of British Columbia, Canada

Wednesday, 27 June 2007 11:00am - 12:40pm Alsh 1

WAS16: Performance Evaluation I

1 Interplay Between Routing and Distributed Source Coding in Wireless Sensor Network

Honggang Wang, Dongming Peng, Wei Wang, Hamid Sharif, University of Nebraska-Lincoln, USA; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

2 Technique to Improve MPEG-4 Traffic Schedulers in IEEE 802.15.3 WPANs

Shahab Moradi, Vincent W. S. Wong, The University of British Columbia, Canada

3 Throughput and Delay Analysis of Multihop IEEE 802.11 Networks with Capture

Rima Khalaf, Izhak Rubin, Julian Hsu, University of California-Los Angeles, USA

4 Information Efficiency of Ad Hoc Networks with FH-MIMO Transceivers

Kostas Stamatiou, John G. Proakis, James R. Zeidler, University of California-San Diego, USA

5 Energy and Utility Optimization in Wireless Networks with Random Access

Amirmahdi Khodaian, Babak H. Khalaj, Sharif University of Technology, Iran

6 Intelligent Gateways Placement for Reduced Data Latency in Wireless Sensor Networks

Waleed Youssef, Mohamed Younis, University of Maryland-Baltimore County, USA

Wednesday, 27 June 2007 11:00am - 12:40pm Alsh 2

WAS17: Mesh Networks II

1 Energy Management in Solar Powered WLAN Mesh Nodes Using Online Meteorological Data

Amir A. Sayegh, Terence D. Todd, McMaster University, Canada

2 Scheduling Multiple Partially Overlapped Channels in Wireless Mesh Networks

Haiping Liu, Hua Yu, Xin Liu, Chen-Nee Chuah, Prasant Mohapatra, University of California-Davis, USA

3 Distributed Link Scheduling for TDMA Mesh Networks

Petar Djukic, Shahrokh Valaee, University of Toronto, Canada

4 Backup Routing for Multimedia Transmissions over Mesh Networks

Chungui Liu, Tianjin University, PRC; Datong University, PRC; Yantai Shu, Lianfang Zhang, Tianjin University, PRC; Maode Ma, Nanyang Technological University, Singapore

5 Shared Infrastructure Power Saving for Solar Powered IEEE 802.11 WLAN Mesh Networks

Enrique J. Vargas, Amir A. Sayegh, Terence D. Todd, McMaster University, Canada

6 New Busytone Solutions to Medium Access Control in Wireless Mesh, Ad Hoc, and Sensor Networks

Chi-Hsiang Yeh, Queen's University, Canada

Wednesday, 27 June 2007 2:00pm - 3:40pm Alsh 1

WAS18: Performance Evaluation II

1 Optimal Sleep Strategies with Respect to Traffic Patterns in Wireless Sensor Networks

Christina R. Tavoularis, Stephen B. Wicker, Cornell University, USA

2 Enhanced Binary Search with Time-divided Responses for Efficient RFID Tag Anti-collision

Ji Hwan Choi, Dongwook Lee, Hyounguk Jeon, Jongsub Cha, Hyuckjae Lee, Information and Communications University, Korea

3 Performance Evaluation of Wireless Sensor Networks Using Turbo Codes with Multi-route Transmission

Tadahiro Wada, Kouji Ohuchi, Shizuoka University, Japan; Abbas Jamalipour, The University of Sydney, Australia; Hiraku Okada, Niigata University, Japan; Masato Saito, Nara Institute of Science and Technology, Japan

4 Quarter Sphere based Distributed Anomaly Detection in Wireless Sensor Networks

Sutharshan Rajasegarar, Christopher Leckie, Marimuthu Palaniswami, University of Melbourne, Australia; James C. Bezdek, University of West Florida, USA

5 Energy Efficient Transmission Protocol for Distributed Source Coding in Sensor Networks

Zuoyin Tang, University of Bath, UK; I. A. Glover, University of Strathclyde, UK; A. N. Evans, University of Bath, UK; Jianhua He, University of Essex, UK

6 A Node Recovery Scheme for Data Dissemination in Wireless Sensor Networks

F. Bouhafs, M. Merabti, H. Mokhtar, Liverpool John Moores University, UK

Wednesday, 27 June 2007 2:00pm - 3:40pm Alsh 2

WAS19: Modelling

1 Modeling Hop Length Distributions for Reactive Routing Protocols in One Dimensional MANETs

Chuan Heng Foh, Juki Wirawan Tantra, Jianfei Cai, Chiew Tong Lau, Cheng Peng Fu, Nanyang Technological University, Singapore

2 An Event-detection Estimation Model for Hybrid Adaptive Routing in WSNs

Carlos M. S. Figueiredo, Eduardo F. Nakamura, Federal University of Minas Gerais, Brazil; FUCAPI, Brazil; Antonio A. F. Loureiro, Linnyer B. Ruiz, Federal University of Minas Gerais, Brazil

3 An Analytical Model for Energy Efficiency of Error Control Schemes in Sensor Networks

João H. Kleinschmidt, Walter C. Borelli, State University of Campinas, Brazil; Marcelo E. Pellenz, Pontifical Catholic University of Paraná, Brazil

4 Finite Queuing Model Analysis for Energy and QoS Tradeoff in Contention-based Wireless Sensor Networks

Jun Luo, Lingge Jiang, Chen He, Shanghai Jiao Tong University, PRC

5 A Robust Statistical Scheme to Monitor Transient Phenomenon in Sensor Networks

Vinod Shukla, Daji Qiao, Iowa State University, USA

6 Decentralized Activation in a ZigBee-enabled Unattended Ground Sensor Network: A Correlated Equilibrium Game Theoretic Analysis

Michael Maskery, Vikram Krishnamurthy, The University of British Columbia, Canada

Wednesday, 27 June 2007 4:00pm - 5:40pm Alsh 1

WAS20: Performance Evaluation III

1 7DS—Node Cooperation and Information Exchange in Mostly Disconnected Networks

Suman Srinivasan, Arezu Moghadam, Se Gi Hong, Henning Schulzrinne, Columbia University, USA



2 Predicting the Performance of Mobile Ad hoc Networks using Scaled-down Replicas

Fragkiskos Papadopoulos, Konstantinos Psounis, University of Southern California, USA

3 An Efficient Data Extraction Mechanism for Mining Association Rules from Wireless Sensor Networks

Azzedine Boukerche, Samer Samarah, University of Ottawa, Canada

4 On Data Fusion and Lifetime Constraints in Wireless Sensor Networks

Xiaodong Wang, Demin Wang, Yun Wang, Dharma P. Agrawal, University of Cincinnati, USA; Amitabh Mishra, Virginia Polytechnic Institute and State University, USA

5 Supporting the Sink Mobility: A Case Study for Wireless Sensor Networks

David Tacconi, Iacopo Carreras, Daniele Miorandi, CREATE-NET, Italy; Francesco Chiti, Romano Fantacci, University of Florence, Italy

6 Lifetime Improvement of Wireless Sensor Networks by Collaborative Beamforming and Cooperative Transmission

Zhu Han, Boise State University, USA; H. Vincent Poor, Princeton University, USA

Wednesday, 27 June 2007 4:00pm - 5:40pm Alsh 2

WAS21: Emerging Technologies

1 Countermeasure Uncooperative Behaviors with Dynamic Trust-token in VANETs

Zhou Wang, Chunxiao Chigan, Michigan Technological University, USA

2 ZigBee-based Intra-car Wireless Sensor Network

Hsin-Mu Tsai, Carnegie Mellon University, USA; Cem Saraydar, Timothy Talty, Michael Ames, Andrew Macdonald, General Motors Corporation, USA; Ozan K. Tonguz, Carnegie Mellon University, USA

3 An Improved Vehicular Ad Hoc Routing Protocol for City Environments

Moez Jerbi, Sidi-Mohammed Senouci, Rabah Meraihi, France Telecom R&D, France; Yacine Ghamri-Doudane, Networks and Multimedia Systems Research Group, France

4 Energy Efficient Adaptive Modulation in Wireless Cognitive Radio Sensor Networks

Song Gao, Lijun Qian, Dhadesugoor. R. Vaman, Prairie View A&M University, USA; Qi Qu, University of California-San Diego, USA

5 On the Accuracy of an Indoor Location-sensing Technique Suitable for Impulse Radio Networks

Wenyu Guo, Nick P. Filer, The University of Manchester, UK

6 Critical Design Decisions for Cognitive Networks

Ryan W. Thomas, Luiz A. DaSilva, Madhav V. Marathe, Kerry N. Wood, Virginia Polytechnic Institute and State University, USA

Wireless Communications Symposium

Monday, 25 June 2007 2:00 - 3:40pm Argyl 1

WCS01: Modulation, Coding, and Diversity Techniques I

1 Optimal Diversity Combining Based on Linear Estimation of Rician Fading Channels

Jingxian Wu, Sonoma State University, USA; Chengshan Xiao, University of Missouri-Columbia, USA

2 Asymptotic SER Analysis of EGC and SC in Fading and Non-gaussian Noise and Interference

Amir Nasri, Robert Schober, The University of British Columbia, Canada; Yao Ma, Iowa State University, USA

3 Application of Signal Space Diversity in BICM-ID over Cascaded Rayleigh Fading Channels

Nghi H. Tran, Ha H. Nguyen, University of Saskatchewan, Canada; Tho Le-Ngoc, McGill University, Canada

4 Error Performance of Rectangular Signaling with MRC in Nakagami Fading

Ranjan K. Mallik, Indian Institute of Technology-Delhi, India

5 A Low Complexity Mapping and Modulation Scheme for IEEE 802.15.4b

Manjeet Singh, Zhongding Lei, Francois Chin, Y. S. Kwok, Institute for Infocomm Research, Singapore

6 Near-capacity Transceiver Design Using EXIT-curve Fitting: Three-stage Turbo Detection of Irregular Convolutional Coded Joint Sphere-packing Modulation and Space-Time Coding

O. Alamri, J. Wang, S. X. Ng, L.-L. Yang, L. Hanzo, University of Southampton, UK

Monday, 25 June 2007 2:00 - 3:40pm Castle 1

WCS02: Cooperative Communications I

1 Receiver Design for Wireless Relay Channels with Regenerative Relays

Majid Nasiri Khormuji, Erik G. Larsson, Royal Institute of Technology, Sweden

2 Introducing PHY-layer Fairness in Amplify and Forward Cooperative Diversity Systems

Diomidis S. Michalopoulos, George K. Karagiannidis, Theodoros A. Tsiftsis, Aristotle University of Thessaloniki, Greece

3 Design and Evaluation of IP Header Compression for Cellular-controlled P2P Networks

Tatiana K. Madsen, Aalborg University, Denmark; Qi Zhang, Technical University of Denmark, Denmark; Frank H. P. Fitzek, Aalborg University, Denmark; Marcos Katz, Technical Research Centre of Finland, Finland

4 A Stochastic Framework for Scheduling in Wireless Packet Access Networks

Xin Wang, Georgios B. Giannakis, University of Minnesota, USA

5 The Impact of an Antenna Array in a Relay Network

Ramachandran Rajagopalan, Daryl Reynolds, Matthew C. Valenti, Brian D. Woerner, West Virginia University, USA

6 User Cooperation Through Network Coding

Meng Yu, Jing Li, Rick S. Blum, Lehigh University, USA

Monday, 25 June 2007 2:00 - 3:40pm Clyde

WCS03: CDMA I

1 Channel-matched Spreading Codes for the Downlink of MC-CDMA

Qinghua Shi, Yong Liang Guan, C. L. Law, Nanyang Technological University, Singapore

2 Design of Time and Frequency Domain Pilots for Generalized Multicarrier Systems

Chan-Tong Lam, Carleton University, Canada; Gunther Auer, DoCoMo Euro-Labs, Germany; Florence Danilo-Lemoine, David Falconer, Carleton University, Canada

3 Precoded Block-spread CDMA with Maximum User Support and Frequency-domain Equalization

Justin P. Coon, Toshiba Telecommunications Research Laboratory, UK

4 Iterative Interference Suppression for High-rate Single-carrier Space-Time Block-coded CDMA

Der-Feng Tseng, Wei-Yu Lai, Tzung-Ru Tsai, National Taiwan University of Science and Technology, ROC



- 5 TCP Performance of MC-CDMA Systems with Partial Equalization in Correlated Fading Channels**
G. Leonardi, B. M. Masini, A. Bazzi, G. Pasolini, University of Bologna, Italy; A. Conti, University of Ferrara, Italy; O. Andrisano, University of Bologna, Italy

- 6 Performance Evaluation of CDMA Cellular Systems Considering Both the Soft Capacity Constraint and Users' Smooth Random Mobility**
Carmen B. Rodríguez-Estrello, Felipe A. Cruz-Pérez, CINVESTAV-IPN, Mexico; Lauro Ortigoza-Guerrero, WFI, USA

Monday, 25 June 2007 2:00 - 3:40pm Forth

WCS04: Ultra-wideband (UWB) Communications I

- 1 On the Approximation of the Linear Combination of Log-Normal RVs via Pearson Type IV Distribution: Application to UWB Performance Analysis**
Marco Di Renzo, Fabio Graziosi, Fortunato Santucci, University of L'Aquila, Italy
- 2 Exact Multiple Access Analysis for Pulsed DS-UWB Systems with Episodic Transmission in Flat Nakagami Fading**
Mohammad Azizur Rahman, Shigenobu Sasaki, Hisakazu Kikuchi, Niigata University, Japan
- 3 Single Local-oscillator Solution for Multiband OFDM Systems**
Jian Zhang, Ying Chen, National ICT Australia, Australia
- 4 Accurate Performance Analysis of TR UWB Systems with Arbitrary Front-end Filters**
S. Niranjayan, N. C. Beaulieu, University of Alberta, Canada
- 5 New UWB Receiver Designs Based on a Gaussian-Laplacian Noise-plus-MAI Model**
N. C. Beaulieu, S. Niranjayan, University of Alberta, Canada
- 6 Multi-template Detection of UWB Ranging Signals in Dense Multipath Environments**
S. H. Song, Q. T. Zhang, City University of Hong Kong, PRC

Monday, 25 June 2007 2:00 - 3:40pm Gala

WCS05: MIMO I

- 1 Antenna Selection Strategies for MIMO Systems**
Insoo Hwang, Samsung Electronics Co., Ltd, Korea; Cheolwoo You, Myongji University, Korea; Yungsoo Kim, Samsung Electronics Co., Ltd, Korea; Vahid Tarokh, Harvard University, USA
- 2 On Generating Soft Outputs for Lattice-reduction-aided MIMO Detection**
Vishakan Ponnampalam, Darren McNamara, Andy Lillie, Magnus Sandell, Toshiba Research Europe Ltd., UK
- 3 Effect of Non-linearity on the Performance of MIMO Zero-forcing Receiver with Channel Estimation Error**
Edward K. S. Au, Wai Ho Mow, The Hong Kong University of Science and Technology, PRC
- 4 An Adaptive MIMO System Based on Unified Belief Propagation Detection**
Xiumei Yang, Yong Xiong, Shanghai Research Center for Wireless Communications, PRC; Fan Wang, Zhejiang University, PRC
- 5 QAM Codebooks for Low-complexity Limited Feedback MIMO Beamforming**
Daniel J. Ryan, The University of Sydney, Australia; CSIRO ICT Centre, Australia; I. Vaughan L. Clarkson, University of Queensland, Australia; Iain B. Collings, CSIRO ICT Centre, Australia; Dongning Guo, Michael L. Honig, Northwestern University, USA
- 6 Optimal Precoder for Rate ≤ 1 Space-Time Block Codes**
Alireza Ghaderipoor, Chintha Tellambura, University of Alberta, Canada

Monday, 25 June 2007 4:00 - 5:40pm Argyl 1

WCS06: Modulation, Coding, and Diversity Techniques II

- 1 Equivalent-capacity-based Design of Space-Time Block-coded Sphere-packing-aided Multilevel Coding**
R. Y. S. Tee, O. Alamri, S. X. Ng, L. Hanzo, University of Southampton, UK
- 2 On the Influence of Cyclic Delay Diversity and Doppler Diversity on the Channel Characteristics in OFDM Systems**
Armin Dammann, German Aerospace Center, Germany
- 3 Modulation Schemes Based on Orthogonal Pulses for Time Hopping Ultra Wideband Radio Systems**
Sudhan Majhi, A. S. Madhukumar, A. B. Premkumar, Francois Chin, Nanyang Technological University, Singapore
- 4 Adaptive Modulation and Coding for Hybrid Cooperative Networks**
Emilio Calvanese Strinati, Sheng Yang, Jean Claude Belfiore, Ecole Nationale Supérieure des Telecommunications, France
- 5 An Efficient Selective Receiver for STBC Scheme**
Lijun Liu, Sooyoung Kim, Myoung-Seob Lim, Chonbuk National University, Korea
- 6 Spatial Data Multiplexing over OFDM/OQAM Modulations**
Mamdouh El Tabach, Jean-Philippe Javardin, Maryline Héléard, France Télécom, France

Monday, 25 June 2007 4:00 - 5:40pm Castle 1

WCS07: Cooperative Communications II

- 1 Spatially Coordinate-interleaved Design for Mutually Cooperative Relay System**
Kyungmi Park, Hyun Seok Ryu, Korea University, Korea; Hee Soo Lee, Electronics and Telecommunications Research Institute, Korea; Chung G. Kang, Korea University, Korea
- 2 Optimizing Power Allocation and Matching of Cooperative Diversity Systems**
Velupillai Mahinthan, University of Waterloo, Canada; Lin Cai, University of Victoria, Canada; Jon W. Mark, Xuemin Shen, University of Waterloo, Canada
- 3 SNCC: A Selective Network-coded Cooperation Scheme in Wireless Networks**
Cong Peng, Tsinghua University, PRC; Qian Zhang, The Hong Kong University of Science and Technology, PRC; Ming Zhao, Yan Yao, Tsinghua University, PRC
- 4 Achievable Rates of Compress-and-Forward Cooperative Relaying on Gaussian Vector Channels**
Sebastien Simoens, Motorola Labs, France; Olga Muñoz, Josep Vidal, Universitat Politècnica de Catalunya, Spain
- 5 Cooperative Transmission Protocols with High Spectral Efficiency and High Diversity Order Using Multiuser Detection and Network Coding**
Zhu Han, Boise State University, USA; Xin Zhang, H. Vincent Poor, Princeton University, USA
- 6 Noncooperative Routing with Cooperative Diversity**
Benjamin R. Hamilton, Xiaoli Ma, Georgia Institute of Technology, USA

Monday, 25 June 2007 4:00 - 5:40pm Clyde

WCS08: CDMA II

- 1 Maximal Ratio Combining in Cellular MIMO-CDMA Downlink Systems**
Jing Ma, Tsinghua University, PRC; The Chinese University of Hong Kong, PRC; Yingjun Zhang, The Chinese University of Hong Kong, PRC; Xin Su, Yan Yao, Tsinghua University, PRC
- 2 Hybrid Flow-control for CDMA-2000**
Tamir Erlichman, Ioannis Lambadaris, Parsa Larijani, Carleton University, Canada



3 Reliability-based Partial Parallel Interference Cancellation and Iterative Decoding for DS-CDMA over Fading Channels

Ayman Elezabi, American University in Cairo, Egypt

4 Improved Equalization for Coded, Zero-padded OFDM (ZP-OFDM) Systems

Monisha Ghosh, Philips Research USA, USA

5 Precoding for Multiuser Orthogonal Space-Time Block-coded OFDM: Mean or Covariance Feedback?

Yu Fu, University of Alberta, Canada; Witold A. Krzymień, University of Alberta, Canada; TRILabs, Canada; Chintha Tellambura, University of Alberta, Canada

6 Uplink-Downlink Imbalance in Wireless Cellular Networks

D. Ghosh, C. Lott, Qualcomm Incorporated, USA

Monday, 25 June 2007 4:00 - 5:40pm Forth

WCS09: Ultra-wideband (UWB) Communications II

1 BER Analysis in a Generalized UWB Frequency Selective Fading Channel with Randomly Arriving Clusters and Rays

Wei-Cheng Liu, Li-Chun Wang, National Chiao Tung University, ROC

2 TOA Estimation with Pulses of Unknown Shape

Antonio A. D'Amico, Umberto Mengali, Lorenzo Taponecco, University of Pisa, Italy

3 Analysis of Code-assisted Blind Synchronization for UWB Systems

Yeqiu Ying, Mounir Ghogho, University of Leeds, UK; Ananthram Swami, ARL, USA

4 Inter-symbol Interference Mitigation in High-data-rate UWB Systems

Vincenzo Lottici, University of Pisa, Italy; Lin Wu, Zhi Tian, Michigan Technological University, USA

5 Generalized CRLB for DA and NDA Synchronization of UWB Signals with Clock Offset

Saeed Khalesehosseni, John Nielsen, University of Calgary, Canada

6 A Low-complexity Impulse Radio Receiver Based upon Gaussian Mixtures

Tomaso Erseghe, University of Padova, Italy

Monday, 25 June 2007 4:00 - 5:40pm Gala

WCS10: OFDM Systems I

1 Uplink-Downlink Duality of ICI Cancellation in OFDMA Systems with Carrier-frequency Offset

Min Huang, Ming Zhao, Shidong Zhou, Jing Wang, Tsinghua University, PRC

2 Evaluation of Clipped OFDM and SC/FDE Alternatives for Block Transmission Using Iterative Receiver Techniques

Paulo Torres, Polytechnical Institute of Castelo Branco, Portugal; António Gusmão, Technical University of Lisbon, Portugal

3 Synchronization Signal Design for OFDM Based on Time-Frequency Hopping Patterns

Jiann-Ching Guey, Ericsson Research, USA

4 Turbo Equalization for Clipped and Filtered COFDM Signals

Peter Zillmann, Wolfgang Rave, Gerhard Fettweis, Technische Universität Dresden, Germany

5 OFDM PAPR Reduction Using Selected Mapping without Side Information

Boon Kien Khoo, Stéphane Y. Le Goff, Charalampos C. Tsimenidis, Bayan S. Sharif, Newcastle University, UK

6 Phase Noise Suppression for OFDM Systems over Fast Time-varying Channels

O. Can Ozdural, Huaping Liu, Oregon State University, USA

Tuesday, 26 June 2007 9:00 - 10:40am Argyl 3

WCS11: MIMO V

1 MIMO Precoders Using Spatial and Path Correlations for Multipath Fading Channels

Hamid Reza Bahrami, Tho Le-Ngoc, McGill University, Canada

2 Impact of Spatial Fading Correlation and Keyholes on the Capacity of MIMO Systems with Transmitter and Receiver CSI

Amine Maaref, Sonia Aïssa, University of Quebec, Canada

3 Limited Feedback Precoding in Realistic MIMO Channel Conditions

G. W. K. Colman, T. J. Willink, Communications Research Centre, Canada

4 MIMO LMMSE Transceiver Design with Imperfect CSI at Both Ends

Minhua Ding, Steven D. Blostein, Queen's University, Canada

5 BER Analysis of MIMO-SVD Systems with Channel Estimation Error and Feedback Delay

Edward K. S. Au, The Hong Kong University of Science and Technology, PRC; Shi Jin, Southeast University, PRC; Matthew R. McKay, W. H. Mow, The Hong Kong University of Science and Technology, PRC; Xiqi Gao, Southeast University, PRC; Iain B. Collings, CSIRO, Australia

6 Achievable Sum-rate Analysis of Practical Multiuser Scheduling Schemes with Limited Feedback

Alexis A. Dowhuszko, Graciela Corral-Briones, National University of Cordoba, Argentina; Jyri Hämäläinen, University of Oulu, Finland; Risto Wichman, Helsinki University of Technology, Finland

Tuesday, 26 June 2007 9:00 - 10:40am Castle 1

WCS12: Space-Time Coding I

1 A New STC Structure to Achieve Generalized Optimal Diversity with a Reduced Design Complexity

Moon Il Lee, LG Electronics, Korea; Seong Keun Oh, Ajou University, Korea; Dong Seung Kwon, Electronics and Telecommunications Research Institute, Korea

2 Full-rate Real-symbol-decodable O-STBC with Offset QAM for Four Transmit Antennas

Kun Zhong, Boon Chong Ng, Yong Liang Guan, Nanyang Technological University, Singapore

3 Optimum and Suboptimum Receivers for Space-Time Coded Systems in Correlated Fading

Ranjan K. Mallik, Indian Institute of Technology-Delhi, India; Parul Garg, Netaji Subhas Institute of Technology, India

4 Performance of Spatial Phase Coding (SPC) in Broadband OFDM Systems

Stefan Kaiser, DoCoMo Communications Laboratories Europe GmbH, Germany

5 Increasing Power Efficiency in Transmitter Diversity Systems under Error Performance Constraints

Diomidis S. Michalopoulos, Athanasios S. Lioumpas, George K. Karagiannidis, Aristotle University of Thessaloniki, Greece

6 Space-Time Block Coding HARQ Scheme for High Frequency Selective Channels

Kodzovi Acolatse, Yeheskel BarNess, New Jersey Institute of Technology, USA

Tuesday, 26 June 2007 9:00 - 10:40am Argyl 1

WCS13: Satellite Communications

1 Performance Evaluation of CCSDS File Delivery Protocol (CFDP) in Deferred NAK Mode over Geostationary Earth Orbit (GEO)-Satellite Links

Ruhai Wang, Deepika L. Rudraraju, Paradesh K. V. Rapet, Lamar University, USA; Youyun Xu, Shanghai Jiao Tong University, PRC; PLA University of Science and Technology, PRC; Xinbing Wang, Shanghai Jiao Tong University, PRC



2 Distributed Space-Time Coded Transmission for Mobile Satellite Communication Using Ancillary Terrestrial Component

Hee Wook Kim, Kunseok Kang, Do-Seob Ahn, Electronics and Telecommunications Research Institute, Korea

3 Soft Demapping and Iterative Decoding for Satellite Communications

Simone Morosi, Romano Fantacci, Enrico Del Re, Rosalba Suffritti, University of Florence, Italy

4 On the Acquisition Ambiguity for Galileo BOC(n,n) Modulated Signals

Giuseppe Avellone, Maristella Frazzetto, Ettore Messina, ST Microelectronics, Italy

5 Combined Delay and Rate Differentiation Packet Scheduling for Multimedia Content Delivery in Satellite Broadcast/Multicast Systems

Hongfei Du, Linghang Fan, Barry G. Evans, University of Surrey, UK

Tuesday, 26 June 2007 9:00 - 10:40am Boisdale 2

WCS14: Detection and Estimation I

1 Fading Performance Evaluation of Adaptive MSER Beamforming Receiver for QAM Systems

Andrew Livingstone, Detica, UK; Sheng Chen, Lajos Hanzo, University of Southampton, UK

2 Frequency Domain Joint Estimation of Synchronization Parameter and Channel Impulse Response in Composite Radio Receiver

Tianqi Wang, Cheng Li, University of Newfoundland, Canada; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

3 Improved DS-CDMA Multi-stage PIC in Fading Channels using a Generalized Soft Limiter

Beibei Wang, David W. Matolak, Ohio University, USA

4 Optimal Power Allocation in SVD Equalized Multicarrier Systems

Andreas Ahrens, University of Rostock, Germany; Christoph Lange, T-Systems Enterprise Services GmbH, Germany; Volker Kühn, Tobias Weber, University of Rostock, Germany

5 Frequency-domain Channel Estimation and Equalization for Broadband Wireless Communications

Yahong Rosa Zheng, University of Missouri-Rolla, USA; Chengshan Xiao, University of Missouri-Columbia, USA

6 Robust Frequency-hopping System for Channels with Interference and Frequency-selective Fading

Don Torrieri, U. S. Army Research Laboratory, USA; Shi Cheng, Matthew C. Valenti, West Virginia University, USA

Tuesday, 26 June 2007 9:00 - 10:40am Argyll 2

WCS15: Transport Protocols and Techniques for Wireless Networks

1 Cross-layer Design and Analysis Wireless Profiled TCP for Vertical Handover

Humphrey Rutagemwa, Sangheon Pack, Xuemin Shen, Jon W. Mark, University of Waterloo, Canada

2 Improving TCP Goodput in 802.11 Access Networks

Long Le, Sahin Albayrak, Muslim Muslim, Ahmet Cihat Toker, Technische Universität Berlin, Germany

3 Half Direct-link Setup (H-DLS) for Fairness between External and Local TCP Connections in IEEE 802.11e Wireless LANs

Nakjung Choi, Yongho Seok, Yanghee Choi, Taekyoung Kwon, Seoul National University, Korea

4 Analytical Model of TCP with Enhanced Recovery Mechanism for Wireless Environments

A. Jayanthan, Harsha Sirisena, University of Canterbury, New Zealand; Vijay Garg, University of Illinois at Chicago, USA

5 TCP ACK Congestion Control and Filtering for Fairness Provision in the Uplink of IEEE 802.11 Infrastructure Basic Service Set

Feyza Keceli, Inanc Inan, Ender Ayanoglu, University of California-Irvine, USA

6 Experimental Performance Comparison of Rate-based and Store-and-Forward Transmission Mechanisms over Error-prone Cislunar Communication Links

Ruhai Wang, Anil Ayyagari, Xuan Wu, Bo Sun, Wei-Tai Hsu, Lamar University, USA

Tuesday, 26 June 2007 11:00am - 12:40pm Argyll 1

WCS16: Wireless LANs I

1 A Rate Adaptive Transmission Opportunity for Fairness over IEEE 802.11e Wireless LANs

Eunkyoung Kim, Electronics and Telecommunications Research Institute, Korea; Young-Joo Suh, Pohang University of Science and Technology, Korea

2 A Novel Piggyback Selection Scheme in IEEE 802.11e HCCA

Hyun-Jin Lee, Jae-Hyun Kim, Ajou University, Korea; Sunghyun Cho, Stanford University, USA

3 A Collision-free based Rotational Listening Strategy (RLS) for IEEE 802.15.4 WPAN

Shiann-Tsong Sheu, National Central University, ROC; Yun-Yen Shih, Tamkang University, ROC

4 VLSI Architectures for Layered Decoding for Irregular LDPC Codes of WiMax

Kiran K. Gunnam, Gwan S. Choi, Texas A&M University, USA; Mark B. Yearly, Mohammed Atiquzzaman, University of Oklahoma, USA

5 Adaptive-buffer Power Save Mechanism for Mobile Multimedia Streaming

Janet Adams, Gabriel-Miro Muntean, Dublin City University, Ireland

6 On Channel State Inference and Prediction Using Observable Variables in 802.11b Network

Shirish Karande, Michigan State University, USA; Syed Ali Khayam, National University of Science and Technology, Pakistan; Yongju Cho, Michigan State University, USA; ETRI, Korea; Kiran Misra, Hayder Radha, Michigan State University, USA; Jaegon Kim, Jin-Woo Hong, ETRI, Korea

Tuesday, 26 June 2007 11:00am - 12:40pm

WCS17: Resource Allocation and Management I

1 Time Sharing Policy in Wireless Networks for Variable Rate Transmission

Xiaolu Zhang, Meixia Tao, Chun Sum Ng, National University of Singapore, Singapore

2 A Generic Centralized Downlink Scheduler for Next Generation Wireless Cellular Networks

Bader Al-Manthari, Queen's University, Canada; Najah Abu Ali, UAE University, United Arab Emirates; Nidal Nasser, University of Guelph, Canada; Hossam Hassanein, Queen's University, Canada

3 Novel Inter-cell Interaction Approach for WCDMA-based Cognitive Networks

J. Nasreddine, O. Sallent, J. Pérez-Romero, R. Agustí, Universitat Politècnica de Catalunya, Spain

4 Optimal Resource Allocation in Wireless Multiaccess Video Transmissions

Cong Shen, Mihaela van der Schaar, University of California-Los Angeles, USA

5 QoS-guaranteed Transmission Scheme Selection for OFDMA Multi-hop Cellular Networks

Jemin Lee, Sungsoo Park, Hano Wang, Daesik Hong, Yonsei University, Korea



6 Policy-based QoS-aware Packet Scheduling for CDMA 1x EV-DO

Jinho Hwang, George Washington University, USA; M. Tamer Refaai, Virginia Polytechnic Institute and State University, USA; Hyeon-Ah Choi, George Washington University, USA; Jae-Hoon Kim, SK Telecom, Korea; JungKyo Sohn, Hyeon I. Choi, Seoul National University, Korea

Tuesday, 26 June 2007 11:00am - 12:40pm Argyl 3

WCS18: MIMO VII

1 A Simple Iterative Gaussian Detector for Severely Delay-spread MIMO Channels

Tianbin Wo, Peter Adam Hoehner, University of Kiel, Germany

2 Bit Error Performance of Orthogonal Space-Time Block Codes over Time-selective Channel

Jun He, Pooi Yuen Kam, National University of Singapore, Singapore

3 Performance Analysis of Full-rate STBCs from Coordinate Interleaved Orthogonal Designs

Ying Rao Wei, M. Z. Wang, The Hong Kong Polytechnic University, PRC

4 Asymptotic Evaluation of Eigenvalue Distribution and Ergodic Capacity under Outdoor-Indoor MIMO Measured Channel

A. Taparugssanagorn, M. Alatosava, V. -M. Holappa, J. Ylitalo, University of Oulu, Finland

5 Reduced-complexity Cluster Modelling for the 3GPP Channel Model

Hui Xiao, Alister G. Burr, Rodrigo C. de Lamare, University of York, UK

6 Severely Fading MIMO Channels: Models and Mutual Information

Seung Ho Choi, Peter Smith, University of Canterbury, New Zealand; Ben Allen, Wasim Q. Malik, University of Oxford, UK; Mansoor Shafi, Telecom New Zealand Ltd., New Zealand

Tuesday, 26 June 2007 11:00am - 12:40pm Boisdale 2

WCS19: Cross-layer Design II

1 Opportunistic Network Coding for Wireless Networks

Wei Chen, The Hong Kong University of Science & Technology, PRC; Tsinghua University, PRC; Khaled B. Letaief, The Hong Kong University of Science & Technology, PRC; Zhigang Cao, Tsinghua University, PRC

2 Trade-offs of Spatial Gain for QoS-guaranteed Services in the MIMO Broadcast Channels

S. Lee, J. S. Thompson, The University of Edinburgh, UK

3 Fingerprints in the Ether: Using the Physical Layer for Wireless Authentication

Liang Xiao, Larry Greenstein, Narayan Mandayam, Wade Trappe, Rutgers University, USA

4 Multiuser Diversity with Imperfect Channel Quality Feedback in MIMO Broadcast Networks

Bongyong Song, Rene L. Cruz, Laurence B. Milstein, University of California-San Diego, USA

5 Joint Adaptive FDMA/SDMA in Chunk-based OFDM Systems

Elena Costa, Ying Zhang, Alberto Totaro, Siemens AG, Germany

6 Multiuser Interference Balancing for General Interference Functions—A Convergence Analysis

Holger Boche, Technical University of Berlin, Germany; Heinrich-Hertz-Institut, Germany; Mobile Communications, Germany; Martin Schubert, Mobile Communications, Germany

Tuesday, 26 June 2007 11:00am - 12:40pm Argyl 2

WCS20: Localization Techniques

1 Mobile Position Tracking by TDOA-Doppler Hybrid Estimation in Cellular Mobile System

Wen Pan, Jiang Wu, Zhanjun Jiang, Yan Wang, Xiaohu You, Southeast University, PRC

2 General Selection Criteria to Mitigate the Impact of NLoS Errors in RTT Measurements for Mobile Positioning

S. Bartelmaos, K. Abed-Meraim, R. Leyman, Ecole Nationale Supérieure des Telecommunications-Paris, France

3 A New Approach for Mobile Localization in Multipath Scenarios

Nadir Castañeda, Maurice Charbit, Eric Moulines, Ecole Nationale Supérieure des Telecommunications, France

4 On the Accuracy Analysis of the Distance-difference Estimation for SSSD Positioning Method in Wireless Communications

Bo-Chieh Liu, Ken-Huang Lin, National Sun Yat-Sen University, ROC

5 Experimental Deployment of Particle Filters in WiFi Networks

Zawar Shah, The University of New South Wales, Australia; National ICT Australia, Australia; Robert A. Malaney, The University of New South Wales, Australia; Xun Wei, Keith Tai, National ICT Australia, Australia

Tuesday, 26 June 2007 2:00pm - 3:40pm Argyl 1

WCS21: Wireless LANs II

1 Contention-based Medium Access Control with Physical Layer Assisted Link Differentiation

Fanglei Sun, Victor O. K. Li, University of Hong Kong, PRC; Zhifeng Diao, Zhengyuan Xu, University of California-Riverside, USA

2 Joint Channel State based Random Access and Adaptive Modulation in Wireless LAN with Multi-packet Reception

W. L. Huang, Khaled Ben Letaief, The Hong Kong University of Science and Technology, PRC; Y. J. Zhang, Chinese University of Hong Kong, PRC

3 Interference Handling in UWB versus 802.11n Networks

Arjunan Rajeswaran, Gyouhwan Kim, Rohit Negi, Carnegie Mellon University, USA; Sai Shankar N, Qualcomm Inc., USA

4 Correlation-based Rate Adaptation via Insights from Incomplete Observations in 802.11 Networks

Xia Zhou+, Peking University, PRC; Jun Zhao, Microsoft Research Asia, PRC; Guanghua Yang, The University of Hong Kong, PRC

5 BER Analysis of 802.11b Networks under Mobility

Puttipong Mahasukhon, Michael Hempel, Hamid Sharif, Ting Zhou, Song Ci, University of Nebraska-Lincoln, USA; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

6 Downlink MIMO Systems Utilizing Cooperation among Base Stations in a Slow Fading Channel

Tsuyoshi Tamaki, Hitachi Ltd., Japan; Kibeom Seong, John M. Cioffi, Stanford University, USA

Tuesday, 26 June 2007 2:00pm - 3:40pm Castle 1

WCS22: Wireless Ad Hoc and Sensor Networks I

1 GrLS: Group-based Location Service in Mobile Ad Hoc Networks

Hui Cheng, Jiannong Cao, Hong Kong Polytechnic University, PRC; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

2 On the Connected Nodes Position Distribution in Ad Hoc Wireless Networks with Statistical Channel Models

Davide Dardari, University of Bologna-Cesena, Italy

3 Coded Cooperation for Ad Hoc Networks with Spatial Multiplexing

Marco Levorato, Stefano Tomasin, University of Padova, Italy; Michele Zorzi, University of Padova, Italy; University of California-San Diego, USA



4 Burst Transfer Eligibility Decision for Real-time Streaming on Multi-hop WPANs

Attila Török, Lóránt Vajda, Bay Zoltán Foundation for Applied Research, Hungary; Felician Németh, Budapest University of Technology and Economics, Hungary

5 RLAR: Robust Link Availability Routing Protocol for Mobile Ad Hoc Networks

Xueyuan Su, Sammy Chan, City University of Hong Kong, PRC; King-Sun Chan, Curtin University of Technology, Australia

6 Cooperation and Routing in Multi-hop Networks

Elzbieta Beres, Raviraj Adve, University of Toronto, Canada

Tuesday, 26 June 2007 2:00pm - 3:40pm Argyl 3

WCS23: Wireless Network Protocols

1 CA-AQM: Channel-aware Active Queue Management for Wireless Networks

Yuan Xue, Vanderbilt University, USA; Hoang V. Nguyen, Klara Nahrstedt, University of Illinois at Urbana-Champaign, USA

2 Performance of a Delay-tolerant Protocol over Point-to-Point LEO-Satellite Communication Links: An Experimental Approach

Ruhai Wang, Prabin Manandhar, Paradesh K. V. Rapet, Lamar University, USA; Xinbing Wang, Shanghai Jiao Tong University, PRC; Youyun Xu, Shanghai Jiao Tong University, PRC; PLA University of Science and Technology, PRC

3 Efficient Data Access Algorithms for ITS-based Networks with Multi-hop Wireless Links

Sangheon Park, Korea University, Korea; Humphrey Rutagemwa, Xuemin Shen, Jon Mark, University of Waterloo, Canada; Kunwoo Park, Seoul National University, Korea

4 Fulfillment-based Fairness: A New Fairness Notion for Multi-AP Wireless Hotspots

Wei Zhou, Daji Qiao, Iowa State University, USA

5 Simulative Analysis of a Multi-cell Admission Control Algorithm for WCDMA Networks

Gábor Fodor, Ericsson Research, Sweden; Gustavo Azzolin, KTH, Royal Institute of Technology, Sweden

6 Adaptive Coordination Protocol for Heterogeneous Wireless Networks

Vamsi Paruchuri, Arjan Duresi, Louisiana State University, USA

Tuesday, 26 June 2007 2:00pm - 3:40pm Boisdale 2

WCS24: Resource Allocation and Management II

1 Performance Analysis of Adaptive Rate Scheduling Scheme for 3G WCDMA Wireless Networks with Multi-operators

Salman A. AlQahtani, King Fahd Security College, Saudi Arabia; Ashraf S. Mahmoud, King Fahd University for Petroleum & Minerals, Saudi Arabia; Asrar U. Sheikh, Foundation University, Pakistan

2 Optimal Adaptive Modulation and Coding with Switching Costs

Arsalan Farrokh, Vikram Krishnamurthy, Robert Schober, The University of British Columbia, Canada

3 Energy-efficient Multi-hop Scheduling for Multi-rate 802.15.3 WPANs

Jinhui Shen, Ioanis Nikolaidis, Janelle J. Harms, University of Alberta, Canada

4 Radio Resource Allocation Algorithm for Relay-aided Cellular OFDMA System

Megumi Kaneko, Aalborg University, Denmark; Kyoto University, Japan; Petar Popovski, Aalborg University, Denmark

5 IEEE802.16e Best Effort Performance Investigation

Giacomo Leonardi, Alessandro Bazzi, Gianni Pasolini, Oreste Andrisano, University of Bologna, Italy

6 Proportional Fair Scheduling for Downlink OFDMA

Yao Ma, Iowa State University, USA

Tuesday, 26 June 2007 4:00pm - 5:40pm Argyl 1

WCS25: OFDM Systems II

1 Iterative Turbo Channel Estimation for OFDM System over Rapid Dispersive Fading Channel

Ming Zhao, The Australian National University, Australia; National ICT Australia Ltd, Australia; Zhenning Shi, Mark C. Reed, National ICT Australia Ltd, Australia

2 A Distributed Approach to Interference Mitigation between OFDM-based 802.16 Systems Operating in License-exempt Spectrum

Omar Ashagi, Sean Murphy, Liam Murphy, University College Dublin, Ireland

3 Pilot Design for Joint Channel and Frequency-dependent Transmit/Receive IQ Imbalance Estimation and Compensation in OFDM-based Transceivers

Eduardo Lopez-Estraviz, Stefaan De Rore, Francois Horlin, Andre Bourdoux, Liesbet Van der Perre, Interuniversity Micro-Electronics Center, Belgium

4 On the Impact of Carrier Frequency Offsets in OFDM/SDMA Systems

Sheng Zhou, Kai Zhang, Zhisheng Niu, Tsinghua University, PRC

5 Performance Analysis of OFDM based UWB Systems Enhanced with Frequency-domain Spreading

Esa Kunnari, Jari Iinatti, University of Oulu, Finland

6 Convolutional Multi-code Multiplexing for OFDM Systems

Wei Jiang, Daoben Li, Beijing University of Posts and Telecommunications, PRC

Tuesday, 26 June 2007 2:00pm - 3:40pm Argyl 2

WCS26: Propagation and Channel Characterization I

1 Mapping for Iterative MMSE-SIC with Belief Propagation

Satoshi Gounai, Tokyo University of Science, Japan; Tomoaki Ohtsuki, Keio University, Japan

2 Eigen-analysis of UWB Channel on the Basis of Information Theoretic Criteria

Abdellah Chehri, Paul Fortier, Pierre-Martin Tardif, Laval University, Canada

3 Effects of Channel Models and Rake Receiving Process on UWB-IR System Performance

Serhat Erkucuk, Dong In Kim, Simon Fraser University, Canada; Kyung Sup Kwak, Inha University, Korea

4 Outdoor Path Loss Models for IEEE 802.16 in Suburban and Campus-like Environments

Damiano De Luca, Consorzio Università Industria Laboratori di Radiocomunicazioni, Italy; Fabio Fiano, Franco Mazzenga, University of Rome "Tor Vergata", Italy; Cristiano Monti, Consorzio Università Industria Laboratori di Radiocomunicazioni, Italy; Stefano Ridolfi, British Telecom Italia, Italy; Francesco Vallone, Ericsson Telecomunicazioni, Italy

5 Basis Expansion Model and Doppler Diversity Techniques for Frequency Domain Channel Estimation and Equalization in DS-CDMA Systems

Tianqi Wang, Cheng Li, Memorial University of Newfoundland, Canada; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

6 Joint Transmitter-Receiver Beamforming over Space-Time Fading Channels

T. Zhang, A. Manikas, Imperial College London, UK



Tuesday, 26 June 2007 4:00pm - 5:40pm Castle 1

WCS27: Wireless Ad Hoc and Sensor Networks II

- 1 Routing for Emitter/Reflector Signal Detection in Wireless Sensor Network Systems**
Yang Yang, Rick S. Blum, Lehigh University, USA
- 2 On the Hardness of Minimum Cost Blocking Attacks on Multi-path Wireless Routing Protocols**
Qi Duan, Mohit Virendra, Shambhu Upadhyaya, State University of New York-Buffalo, USA
- 3 RARE—Resource Aware Routing for mEsh**
Karol Kowalik, Brian Keegan, Mark Davis, Dublin Institute of Technology, Ireland
- 4 A Connectivity Model for the Analysis of a Wireless Hoc Network in a Circular Area**
Enrica Salbaroli, Alberto Zanella, University of Bologna, Italy
- 5 Optimal Rate and Beam-width Control in Wireless Ad hoc Networks with Directional Antennas**
Navid Ehsan, Rene L. Cruz, University of California-San Diego, USA

Tuesday, 26 June 2007 4:00pm - 5:40pm Argyl 3

WCS28: Wireless Mesh Networks

- 1 Voice Transmission Enhancing Model on Wireless Mesh Networks**
Sangkil Jung, Sangjin Hong, Kyungtae Kim, Junghoon Jee, State University of New York-Stony Brook, USA; Eunah Kim, Electronics and Telecommunications Research Institute, Korea
- 2 Gateway Placement for Throughput Optimization in Wireless Mesh Networks**
Fan Li, Yu Wang, University of North Carolina-Charlotte, USA; Xiang-Yang Li, Illinois Institute of Technology, USA
- 3 Multi-antenna Techniques for Wireless Mesh Networks in an Outdoor Environment**
F. Babich, M. Comisso, L. Manià, Università di Trieste, Italy
- 4 Optimizing Throughput with Carrier Sensing Adaptation for IEEE 802.11 Mesh Networks Based on Loss Differentiation**
Hui Ma, Soo Young Shin, Sumit Roy, University of Washington, USA
- 5 Progressive Route Calculation Protocol for Wireless Mesh Networks**
Xuhui Hu, Myung J. Lee, Tarek N. Saadawi, City University of New York, USA
- 6 Network-wide Resource Optimization of Wireless OFDMA Mesh Networks with Multiple Radios**
Pablo Soldati, Mikael Johansson, Royal Institute of Technology KTH, Sweden

Tuesday, 26 June 2007 4:00pm - 5:40pm Boisdale 2

WCS29: MIMO VIII

- 1 An Asymptotically Sum-rate Optimal Precoding Scheme for MIMO Gaussian Broadcast Channel**
Hao Li, Changqing Xu, Shanghai Jiaotong University, PRC; Pingzhi Fan, Southwest Jiao Tong University, PRC
- 2 Linear Cooperative Multiuser MIMO Transceiver Design with Per BS Power Constraints**
Antti Tölli, Marian Codreanu, Markku Juntti, University of Oulu, Finland
- 3 Joint Design of Tx-Rx Beamformers in MIMO Downlink Channel**
M. Codreanu, A. Tölli, M. Juntti, M. Latva-aho, University of Oulu, Finland
- 4 Capacity Analysis of MIMO System over Identically Independent Distributed Weibull Fading Channels**
Ibrahim Y. Abualhaol, Mustafa M. Matalgah, University of Mississippi, USA

5 Optimizing Linear Dispersion Codes for Wideband MIMO Systems

Luca Venturino, Università degli Studi di Cassino, Italy; Narayan Prasad, NEC Labs America, USA; Xiaodong Wang, Columbia University, USA; Mohammad Madhian, NEC Labs America, USA

6 Optimum-weighted RLS Channel Estimation for Time-varying Fast Fading MIMO Channels

Toshiaki Koike, Harvard University, USA

Tuesday, 26 June 2007 4:00pm - 5:40pm Argyl 2

WCS30: Propagation and Channel Characterization II

- 1 On the Simulation of Tikhonov Random Processes**
Giuseppe Thadeu Freitas de Abreu, University of Oulu, Finland
- 2 A New Multiple Scatterer Model for Fixed Indoor Wireless Communication Channels**
Paisarn Sonthikorn, Ozan K. Tonguz, Carnegie Mellon University, USA
- 3 A Cube Oriented Ray Launching Algorithm for 3D Urban Field Strength Prediction**
Rudolf Mathar, Michael Reyer, Michael Schmeink, RWTH Aachen University, Germany
- 4 An Impulse Response Model for the 60 Ghz Channel Based on Spectral Techniques of α -stable Processes**
Nourddine Azzaoui, Université de Bourgogne, France; Laurent Clavier, Institut d'Electronique de Microélectronique et de Nanotechnologie, France
- 5 Intersymbol Interference due to the Atmospheric Turbulence for Free-space Optical Communication System**
Mostofa K. Howlader, Marquette University, USA; Jinho Jung, Hoseo University, Korea
- 6 On the Fade Duration Distribution in Nakagami Fading Channels**
F. Ramos-Alarcón, V. Ya. Kontorovitch, M. Lara, National Polytechnic Institute, Mexico

Wednesday, 27 June 2007 9:00 - 10:40am Argyl 1

WCS31: Resource Allocation and Management III

- 1 Optimal Power Allocation for Amplify-and-Forward Relay Networks via Conic Programming**
Tony Q. S. Quek, Moe Z. Win, Massachusetts Institute of Technology, USA; Hyundong Shin, Kyung Hee University, Korea; Marco Chiani, University of Bologna, Italy
- 2 Satisfying Elastic Short Term Fairness in High Throughput Wireless Communication Systems with Multimedia Services**
Timotheos Kastrinogiannis, Symeon Papavassiliou, National Technical University of Athens, Greece
- 3 A QoS Architecture for IDMA-based Multi-service Wireless Networks**
Qian Huang, Sammy Chan, King-Tim Ko, Li Ping, Peng Wang, City University of Hong Kong, PRC
- 4 Link Error Prediction in Wireless Communication Systems with Quality Based Power Control**
Wolfgang Karner, Olivia Nemethova, Markus Rupp, Vienna University of Technology, Austria
- 5 Downlink Call Admission Control in Multiservice WiMAX Networks**
Bo Rong, Yi Qian, Kejie Lu, University of Puerto Rico at Mayagüez, Puerto Rico
- 6 Joint Resource Allocation and Routing for OFDMA-based Broadband Wireless Mesh Networks**
Kemal Karakayali, Joseph H. Kang, Murali Kodialam, Krishna Balachandran, Bell Laboratories-Alcatel-Lucent, USA



Wednesday, 27 June 2007 9:00 - 10:40am Boisdale 2

WCS32: MIMO IX

- 1 Differential Bell-labs Layered Space-Time Architectures**
L.-Y. Song, University of Oslo, Norway; Alister G. Burr, Rodrigo C. de Lamare, The University of York, UK
- 2 Throughput Maximization Transmission Control Scheme Using Precoding for MIMO Systems**
Kenichi Kobayashi, Tokyo University of Science, Japan; Tomoaki Ohtsuki, Keio University, Japan; Toshinobu Kaneko, Tokyo University of Science, Japan
- 3 On the Maximum Useful Number of Receiver Antennas for MRC Diversity in Cochannel Interference and Noise**
Norman C. Beaulieu, Xiaodi Zhang, University of Alberta, Canada
- 4 An Enhanced DSTD-OFDM System with Decision-feedback Detection**
Hyounkuk Kim, Hyuncheol Park, Information and Communications University, Korea
- 5 A Post-detection SNR-aided Timing Recovery Loop for MIMO-OFDM Receivers**
Wenzhen Li, Masayuki Tomisawa, OKI Techno Centre, Singapore

Wednesday, 27 June 2007 9:00 - 10:40am Argyl 3

WCS33: OFDM Systems III

- 1 Frequency Offset Tracking for OFDM Systems via Scattered Pilots and Virtual Carriers**
Tao Cui, California Institute of Technology, USA; Feifei Gao, ; A. Nallanathan, National University of Singapore, Singapore
- 2 Efficient Adaptive Resource Allocation for Multiuser OFDM Systems with Minimum Rate Constraints**
Wei Xu, Chunming Zhao, Peng Zhou, Yijin Yang, Southeast University, PRC
- 3 Symbol Error Rate of OFDM Systems with Carrier Frequency Offset and Channel Estimation Error in Frequency Selective Fading Channels**
Marco Krondorf, Ting-Jung Liang, Gerhard Fettweis, Technische Universität Dresden, Germany
- 4 Adaptive Bit and Power Loading for OFDM-based Cognitive Radio Systems**
Gaurav Bansal, Md. Jahangir Hossain, Vijay K. Bhargava, The University of British Columbia, Canada
- 5 The Signaling Overhead in Dynamic OFDMA Systems: Reduction by Exploiting Frequency Correlation**
James Gross, Pablo Alvarez, Adam Wolisz, Technische Universität Berlin, Germany
- 6 WiMAX Downlink OFDMA Burst Placement for Optimized Receiver Duty-cycling**
Claude Desset, Interuniversity Micro-Electronics Center, Belgium; Eddie Batista de Lima Filho, Tecnologia e Inovação do Pólo Industrial de Manaus, Brazil; Gregory Lenoir, Interuniversity Micro-Electronics Center, Belgium

Wednesday, 27 June 2007 9:00 - 10:40am Argyl 2

WCS34: Software Defined and Cognitive Radio

- 1 Enhancements to Cognitive Radio based IEEE 802.22 Air-interface**
Shamik Sengupta, Swastik Brahma, Mainak Chatterjee, University of Central Florida, USA; Sai Shankar N, Qualcomm Inc, USA
- 2 Power Control in Cognitive Radio Systems Based on Spectrum Sensing Side Information**
Karama Hamdi, Wei Zhang, Khaled Ben Letaief, The Hong Kong University of Science and Technology, PRC
- 3 A Framework for Dynamic Spectrum Sharing between Cognitive Radios**
Joydeep Acharya, Roy D. Yates, Rutgers University, USA

4 Adaptive Game-based Radio Spectrum Allocation in Doubly Selective Fading Channels

Duo Zhang, Zhi Tian, Michigan Technological University, USA

5 Maximizing Throughput of Cognitive Radio Networks with Limited Primary Users' Cooperation

Anh Tuan Hoang, Ying-Chang Liang, Md Habibul Islam, Institute for Infocomm Research, Singapore

6 Addressing the Dynamic Range Problem in Cognitive Radios

Jing Yang, Robert W. Brodersen, David Tse, University of California-Berkeley, USA

Wednesday, 27 June 2007 9:00 - 10:40am SECC Hall 2

WCS35P: Wireless Communications Symposium Poster Session I

- 1 A Decomposition-based Low-complexity Scheduling Scheme for Power Minimization under Delay Constraints in Time-varying Uplink Channels**
Hojoong Kwon, Byeong Gi Lee, Seoul National University, Korea
- 2 Capacity Approximations for Multiuser MIMO-MRC with Antenna Correlation**
Raymond H. Y. Louie, The University of Sydney, Australia; CSIRO, Australia; Matthew R. McKay, The Hong Kong University of Science and Technology, PRC; Iain B. Collings, CSIRO, Australia; Branka Vucetic, The University of Sydney, Australia
- 3 Channel Delay Impact on CCSDS File Delivery Protocol (CFDP) over Space Communications Links**
Ruhai Wang, Bidhya L. Shrestha, Lamar University, USA; Xiaoli Ma, Georgia Institute of Technology, USA
- 4 Performance Modeling of Multi-rate HDR and Its Effect on TCP Throughput**
Wenjing Wang, Shamik Sengupta, Mainak Chatterjee, University of Central Florida, USA
- 5 Frequency Recovery for Filter-bank Multicarrier Transmission on Doubly-selective Fading Channels**
Michele Carta, Vincenzo Lottici, Ruggero Reggiannini, University of Pisa, Italy
- 6 Spectral Efficiency of Channel-aware Schedulers in Non-identical Composite Links with Interference**
Jingxian Wu, onoma State University, USA; Neelesh B. Mehta, Mitsubishi Electric Research Labs., USA; Andreas F. Molisch, Mitsubishi Electric Research Labs., USA; Lund University, Sweden; Jin Zhang, Mitsubishi Electric Research Labs., USA
- 7 Zero-forcing based Two-phase Relaying**
Hyun Jong Yang, Kyunchun Lee, Joohwan Chun, Korea Advanced Institute of Science and Technology, Korea
- 8 Single and Multiple Parameters Sensitivity Study of Location Management Area Partitioning for GSM Networks**
Yong Huat Chew, Boon Sain Yeo, Institute for Infocomm Research, Singapore; Daniel Chien Ming Kuan, National University of Singapore, Singapore
- 9 Distributed Adaptive Power Allocation for Wireless Relay Networks**
Yonghui Li, Branka Vucetic, Zhendong Zhou, The University of Sydney, Australia; Mischa Dohler, France Telecom R&D, France
- 10 On the Effect of Interference on the Average Degrees of Freedom in MIMO Fading Ad Hoc Networks**
Zohreh Motamedi, M. Reza Soleymani, Concordia University, Canada
- 11 Digital Code Tracking Loops over Frequency-selective Fading Channels**
Tsan-Ming Wu, Tsung-Hua Tsai, Chung Yuan Christian University, ROC

**12 On the Diversity-multiplexing Tradeoff for Multi-antenna Multi-relay Channels**

Yijia Fan, John S. Thompson, The University of Edinburgh, UK;
Abdulkareem Adinoyi, Halim Yanikomeroglu, Carleton University, Canada

13 Design Linear Multiuser Transmitters from Linear Multiuser Receivers

Lie-Liang Yang, University of Southampton, UK

14 A 3GPP-IMS based Approach for Converging Next Generation Mobile Data Networks

Kumudu S. Munasinghe, Abbas Jamalipour, The University of Sydney, Australia

15 Impact of Interference and Medium Access Control on Flow Allocation in Multi-hop Wireless Networks

Kun-Da Wu, Wanjiun Liao, National Taiwan University, ROC

16 A New Hybrid Space-Time Block Codes and Spatial Multiplexing Scheme with Precoding

Jong-Kyu Kim, Agency for Defense Development, Korea;
Heunchul Lee, Inkyu Lee, Korea University, Korea

17 Cooperative Game Theory for Distributed Spectrum Sharing

Juan E. Suris, Luiz A. DaSilva, Virginia Polytechnic Institute and State University, USA; Zhu Han, Boise State University, USA;
Allen B. MacKenzie, Virginia Polytechnic Institute and State University, USA

18 Optimal Detection Ordering for V-BLAST

Sang-Rim Lee, Inkyu Lee, Korea University, Korea

19 On the Reliability of Multi-hop Dynamic Spectrum Access Networks Supporting QoS Driven Applications

Ranjan Pal, University of California-Davis, USA

20 A Distributed Space-Time Trellis Coding Approach for Multi-terminal Relay Networks

Peter Rost, Gerhard Fettweis, Technische Universität Dresden, Germany

21 Space-Time Coded Systems with Joint Transmit and Receive Antenna Selection

Tansal Gucluoglu, Kadir Has University, Turkey; Tolga M. Duman, Arizona State University, USA

22 An Assessment of Fixed-Mobile Convergence

John Waclawsky, Bruce Briley, Motorola, Inc., USA

23 Improved Linear Parallel Interference Cancellers

T. Srikanth, K. Vishnu Vardhan, A. Chockalingam, Indian Institute of Science-Bangalore, India; L. B. Milstein, University of California-San Diego, USA

24 On the Tails of the Distribution of the Sum of Lognormals

Sebastian S. Szyszkowicz, Halim Yanikomeroglu, Carleton University, Canada

25 Sensing-Throughput Tradeoff for Cognitive Radio Networks

Ying-Chang Liang, Yonghong Zeng, Edward Peh, Anh Tuan Hoang, Institute for Infocomm Research, Singapore

26 Performance Analysis of Cooperative Diversity Using Equal Gain Combining (EGC) Technique over Rayleigh Fading Channels

Salama Ikki, Mohamed H. Ahmed, Memorial University, Canada

Wednesday, 27 June 2007 11:00am - 12:40pm Argyl 1

WCS36: Smart Antenna Technologies**1 A Convex Quadratic SDMA Grouping Algorithm Based on Spatial Correlation**

Tarcisio F. Maciel, Anja Klein, Darmstadt University of Technology, Germany

2 An ESPAR Antenna for Beam-space-MIMO Systems using PSK Modulation Schemes

A. Kalis, C. Papadias, Athens Information Technology, Greece; A. G. Kanatas, University of Piraeus, Greece

3 Joint Maximum Likelihood Channel Estimation and Data Detection for MIMO Systems

Mohammed Abuthinien, Sheng Chen, Andreas Wolfgang, Lajos Hanzo, University of Southampton, UK

4 A New MIMO Beamforming Technique Based on Rotation Transformations

Heunchul Lee, Seokhwan Park, Inkyu Lee, Korea University, Korea

5 An Experimental Downlink Multiuser MIMO System with Distributed and Coherently-coordinated Transmit Antennas

Dragan Samardzija, Howard Huang, Reinaldo Valenzuela, Theodore Sizer, Bell Laboratories-Alcatel-Lucent, USA

6 Robust Multibeam Opportunistic Schemes under Quality of Service Constraints

Nizar Zorba, Centre Tecnològic de Telecomunicacions de Catalunya, Spain; Ana I. Pérez-Neira, Universitat Politècnica de Catalunya, Spain

Wednesday, 27 June 2007 2:00pm - 3:40pm Boisdale 2

WCS37: Information Theory Applications in Wireless Communications**1 Accurate Approximations for the Capacity Distribution of OFDM-based Spatial Multiplexing**

Matthew R. McKay, The Hong Kong University of Science and Technology, PRC; Peter J. Smith, University of Canterbury, New Zealand; Himal A. Suraweera, Monash University, Australia; Iain B. Collings, CSIRO, Australia

2 The Effect of Ordered Detection and Antenna Selection on Diversity Gain of Decision Feedback Detector

Yi Jiang, Mahesh K. Varanasi, University of Colorado, USA

3 Resource Allocation for Power-efficient TDMA under Individual Rate Constraints

Xin Wang, Georgios B. Giannakis, University of Minnesota, USA

4 Analysis and Optimization of Power Control in Multiuser Cognitive Wireless Networks

Peng Cheng, Guanding Yu, Zhaoyang Zhang, Peiliang Qiu, Zhejiang University, PRC

5 Capacity-achieving Discrete Signaling over Additive Noise Channels

Anke Feiten, Rudolf Mathar, RWTH Aachen University, Germany

6 Dirty-paper Coding without Channel Information at the Transmitter and Imperfect Estimation at the Receiver

Pablo Piantanida, Pierre Duhamel, L'École Supérieure d'Électricité, France

Wednesday, 27 June 2007 11:00am - 12:40pm Argyl 3

WCS38: OFDM Systems IV**1 Differential Space-Frequency Modulation and 2D-detection for MIMO-OFDM**

Volker Pauli, University of Erlangen-Nuremberg, Germany; Lutz Lampe, The University of British Columbia, Canada; Johannes Huber, University of Erlangen-Nuremberg, Germany

2 User Selection for SDMA Beamforming with Imperfect CSI in MIMO-OFDM Systems

Timothy A. Thomas, Bishwarup Mondal, Kevin L. Baum, Frederick W. Vook, Motorola Labs, USA

3 The Impact of the I/Q Mismatching Errors on the BER Performance of OFDM Communication Systems

Nguyen Thanh Hieu, Heung-Gyoon Ryu, Chungbuk National University, Korea; Cheng-Xiang Wang, Heriot-Watt University, UK; Hsiao-Hwa Chen, National Sun Yat-Sen University, ROC

4 Spectrally Precoded OFDM with Cyclic Prefix

Char-Dir Chung, National Taiwan University, ROC

5 Power Allocation in Multi-carrier Networks with Unicast and Multicast Services

Yuri C. B. Silva, Anja Klein, Darmstadt University of Technology, Germany



- 6 Opportunistic Spectrum Multichannel OFDMA**
Przemysław Pawełczak, R. Venkatesha Prasad, Ramin Hekmat,
Delft University of Technology, The Netherlands

Wednesday, 27 June 2007 11:00am - 12:40pm Boisdale 2

WCS39: MIMO XI

- 1 Low Complexity Transmit Diversity Scheme for SCFDE Transmissions over Time-selective Channels**
Nicola Marchetti, Ernestina Cianca, Ramjee Prasad, Aalborg University, Denmark
- 2 MIMO OFDM Frequency Offset Estimator with Low Computational Complexity**
Yanxiang Jiang, Xiaohu You, Xiqi Gao, Southeast University, China; Hlaing Minn, University of Texas at Dallas, USA
- 3 Non-data Aided Symbol Timing Estimation in MIMO Systems**
Ketan Rajawat, Ajit K. Chaturvedi, Indian Institute of Technology–Kanpur, India
- 4 Statistical Pruning for Near Maximum Likelihood Detection of MIMO Systems**
Tao Cui, Tracey Ho, California Institute of Technology, USA; Chintha Tellambura, University of Alberta, Canada
- 5 Opportunistic Power Allocation for Random Beamforming in MISO Broadcast Channels**
Edward W. Jang, Hyukjoon Kwon, John M. Cioffi, Stanford University, USA
- 6 BER of MIMO-OFDM Systems with Carrier Frequency Offset and Channel Estimation Errors**
Zhongshan Zhang, Wei Zhang, Chintha Tellambura, University of Alberta, Canada

Wednesday, 27 June 2007 11:00am - 12:40pm SECC Hall 2

WCS40P: Wireless Communications Symposium Poster Session II

- 1 Local Tree based Geometric Routing**
Shengpu Liu, Liang Cheng, Lehigh University, USA
- 2 Cost Minimization for Admission Control in Bandwidth Asymmetry Wireless Networks**
Xun Yang, Nanyang Technological University, Singapore; Gang Feng, University of Electronic Science and Technology of China, PRC
- 3 A Frequency Diversity Technique for Interference Mitigation in Coexisting Bluetooth and WLAN**
Jingli Li, Xiangqian Liu, University of Louisville, USA
- 4 A Novel Concept: Message Driven Frequency Hopping (MDFH)**
Qi Ling, Tongtong Li, Michigan State University, USA; Zhi Ding, University of California–Davis, USA
- 5 An Optimal Antenna Assignment Strategy for Information Rain**
Dayu Huang, University of Illinois at Urbana–Champaign, USA; Pingyi Fan, Tsinghua University, PRC; Khaled Ben Letaief, The Hong Kong University of Science and Technology, PRC
- 6 Multi-layer Interleave-division Multiple Access for 3GPP Long Term Evolution**
Peter Adam Hoehner, University of Kiel, Germany; Wen Xu, BenQ Mobile, Germany
- 7 Multiuser MIMO Downlink Transmission over Time-varying Channels**
Kai Zhang, Zhisheng Niu, Tsinghua University, PRC
- 8 Uplink Adaptive Resource Allocation Mitigating Inter-cell Interference Fluctuation for Future Cellular Systems**
Minghai Feng, Lan Chen, Xiaoming She, DoCoMo Beijing Communication Laboratories Co., Ltd, PRC

- 9 Evaluation of Security for DSSS under Repeater Jamming**

Hang Wang, Jingbo Guo, Zhanji Wang, Tsinghua University, PRC

- 10 On the Relay-based Coverage Extension for Non-conventional Multi-hop Wireless Networks**

Ramón Agüero, Johnny Choque, Luis Muñoz, University of Cantabria, Spain

- 11 Performance Evaluation of Middleware for Provisioning LBS in Cellular Networks**

Israel Martin-Escalona, Francisco Barcelo-Arroyo, Universitat Politècnica de Catalunya, Spain

- 12 Overlay, Borůvka-based, Ad hoc Multicast Protocol: Description and Performance Analysis**

Andrea Detti, Nicola Blefari-Melazzi, Claudio Loreti, University of Rome “Tor Vergata”, Italy

- 13 Closed-form Expressions for the Outage and Error Probabilities of Decode-and-Forward Relaying in Dissimilar Rayleigh Fading Channels**

Jeremiah Hu, Norman C. Beaulieu, University of Alberta, Canada

- 14 A Modified V-BLAST Scheme for Achieving the Maximum Possible Diversity Gain**

Shihai Shao, Youxi Tang, Ting Kong, Shaoqian Li, University of Electronic Science and Technology of China, PRC

- 15 An Energy-aware Multi-hop Tree Scatternet for Bluetooth Networks**

Yuan Yuan Zhou, Muralidhar Medidi, Washington State University, USA

- 16 Mobile Direction Assisted Predictive Base Station Switching for Broadband Wireless Systems**

O. Can Ozdural, Huaping Liu, Oregon State University, USA

- 17 Spatio-Temporal Dynamic Spectrum Allocation with Interference Handling**

László Kovács, Attila Vidács, János Tapolcai, Budapest University of Technology and Economics, Hungary

- 18 An Experimental Design Approach for Optimizing SMSE Waveforms to Minimize Coexistent Interference**

T. W. Beard, M. A. Temple, M. L. Roberts, Air Force Institute of Technology, USA

- 19 Channel Access Statistics of Parallel Multiuser Scheduling**

Yao Ma, Dongbo Zhang, Iowa State University, USA

- 20 On the Performance of Distributed Space-Time Block Coding over Nonidentical Ricean Channels and the Optimum Power Allocation**

Jun He, Pooi Yuen Kam, National University of Singapore, Singapore

- 21 A New Trellis Shaping Approach for Pulse-shaped PSK Signals with Almost Constant Envelope**

Makoto Tanahashi, Hideki Ochiai, Yokohama National University, Japan

- 22 Financial Analysis of a Pico-cellular Home Network Deployment**

Holger Claussen, Lester T. W. Ho, Louis G. Samuel, Bell Laboratories–Alcatel-Lucent, UK

- 23 Opportunistic Scheduling for Wireless Network Coding**

Hiroaki Yomo, Petar Popovski, Aalborg University, Denmark

- 24 Evaluation of Grouping Strategies for an Hierarchical SDMA/TDMA Scheduling Process**

Christian Hoymann, Jan Ellenbeck, Ralf Pabst, Marc Schinnenburg, RWTH Aachen University, Germany

- 25 A Novel Metric for Context-aware RAT Selection in Wireless Multi-access Systems**

J. Pérez-Romero, O. Sallent, R. Agustí, Universitat Politècnica de Catalunya, Spain

**26 Seamless Multimedia Broadcasting over cdma2000****BCMCS Network**

Yongwoo Cho, Kyungtae Kang, Heonshik Shin, Seoul National University, Korea

27 On the WiMAX and HSDPA Coexistence

L. Sartori, S-E. Elayoubi, B. Fourestié, Z. Nouir, France Télécom R&D, France

Wednesday, 27 June 2007 2:00pm - 3:40pm Argyl 1

WCS41: Mobility, Location, and Handoff Management**1 On the Verification of the Gravity Model used for Mobility Modeling**

Yong Huat Chew, Institute for Infocomm Research, Singapore; Shinobu Nanba, KDDI R&D Laboratories, Inc., Japan; Peng Keong Tham, Institute for Infocomm Research, Singapore; National University of Singapore Singapore; Boon Sain Yeo, Institute for Infocomm Research, Singapore; Hajime Nakamura, KDDI R&D Laboratories, Inc., Japan

2 On Mobility and Cross-layer Scheduling

Meng Zhang, Siemens Ltd. China, PRC; Vincent Lau, Chin-Tau Lea, The Hong Kong University of Science and Technology, PRC

3 Performance Analysis of a Network-based Protocol for Localized IP Mobility Management

I. Guardini, G. Giaretta, F. Miconi, Telecom Italia Lab, Italy

4 Handoff Probability in Wireless Networks over Rayleigh Fading Channel: A Cross-layer Approach

Yan Zhang, Simula Research Laboratory, Norway

5 A Novel Fuzzy Logic Vertical Handoff Algorithm with Aid of Differential Prediction and Pre-decision Method

Liu Xia, Ling-ge Jiang, Chen He, Shanghai Jiao Tong University, PRC

6 Middleware Vertical Handoff Manager: A Neural Network-based Solution

Nidal Nasser, University of Guelph, Canada; Sghaier Guizani, Qatar University, Qatar; Eyhab Al-Masri, University of Guelph, Canada

Wednesday, 27 June 2007 2:00pm - 3:40pm Argyl 2

WCS42: Cross-layer Design III**1 Wireless Packet Scheduling with Soft Deadlines**

Aditya Dua, Nicholas Bambos, Stanford University, USA

2 Adaptive Radio Resource Allocation for Downlink OFDMA/SDMA Systems

Chun-Fan Tsai, Chung-Ju Chang, National Chiao Tung University, ROC; Fang-Ching Ren, Industrial Technology Research Institute, ROC; Chih-Ming Yen, National Chiao Tung University, ROC

3 A Novel Simulation Model for Coded OFDM in Doppler Scenarios: DVB-T versus DAB

Mario Poggioni, Luca Rugini, Paolo Banelli, University of Perugia, Italy

4 A New Cross Layer Approach to QoS-aware Proportional Fairness Packet Scheduling in the Downlink of OFDM Wireless Systems

Zhen Kong, The University of Hong Kong, PRC; Jiangzhou Wang, University of Kent, UK; Yu-Kwong Kwok, The University of Hong Kong, PRC

5 Cross-layer Optimization with Model-based Parameter Exchange

Andreas Saul, DoCoMo Euro-Labs, Germany; Shoaib Khan, Technische Universität München, Germany; Gunther Auer, Wolfgang Kellerer, DoCoMo Euro-Labs, Germany; Eckehard Steinbach, Technische Universität München, Germany

6 Cross-layer Enhancement for WLAN Systems with Heterogeneous Traffic Based on DQCA

E. Kartsakli, A. Cateura, Technical University of Catalonia, Spain; J. Alonso-Zarate, Ch.V. Verikoukis, Centre Tecnològic de

Telecomunicacions de Catalunya, Spain; L. Alonso, Technical University of Catalonia, Spain

Wednesday, 27 June 2007 2:00pm - 3:40pm Argyl 3

WCS43: OFDM Systems V**1 Transmit Optimization for Relay-based Cellular OFDMA Systems**

Wooseok Nam, Woohyuk Chang, Sae-Young Chung, Yong H. Lee, Korea Advanced Institute of Science and Technology, Korea

2 On the Performance of IEEE 802.16 OFDMA System under Different Frequency Reuse and Subcarrier Permutation Patterns

Huiling Jia, Zhaoyang Zhang, Guanding Yu, Peng Cheng, Shiju Li, Zhejiang University, PRC

3 Utility Maximization for OFDMA Systems over Discrete Sets

Chan Zhou, Gerhard Wunder, Thomas Michel, Heinrich-Hertz-Institut, Germany

4 Collision Model for the Bit Error Rate Analysis of Multi-cell Multi-antenna OFDMA Systems

R. Bosisio, U. Spagnolini, Politecnico di Milano, Italy

5 Centralized Radio Resource Allocation for OFDMA Cellular Systems

Andrea Abrardo, Alessandro Alessio, Paolo Detti, Università di Siena, Italy; Marco Moretti, Università di Pisa, Italy

6 Asynchronous Co-channel Interference Suppression in MIMO OFDM Systems

Qiang Li, Texas A&M University, USA; Jing Zhu, Xingang Guo, Intel Corporation, USA; C. N. Georgiades, Texas A&M University, USA

Wednesday, 27 June 2007 11:00am - 12:40pm Argyl 2

WCS44: UWB**1 Theoretical Limits for Estimation of Vital Signal Parameters Using Impulse Radio UWB**

Sinan Gezici, Bilkent University, Turkey; Zafer Sahinoglu, Mitsubishi Electric Research Labs, USA

2 UWB Impulse Radio Receivers Derived from a Gaussian Mixture Interference Model

Tomaso Erseghe, Valentina Cellini, University of Padova, Italy; Gabriele Doná, Thales Research and Technology (UK) Ltd., UK

3 UWB Geo-regioning using Multivariate Channel Statistics

Christoph Steiner, Armin Wittneben, ETH Zurich, Switzerland

4 Impact of Sampling Jitter on Mostly-digital Architectures for UWB in Bio-medical Applications

Andrew Fort, Interuniversity Micro-Electronics Center, Belgium; Vrije Universiteit Brussel, Belgium; Mike Chen, Robert W. Brodersen, University of California-Berkeley, USA; Claude Desset, Piet Wambacq, Interuniversity Micro-Electronics Center, Belgium; Vrije Universiteit Brussel, Belgium; Leo Van Biesen, Vrije Universiteit Brussel, Belgium

5 UWB based Positioning in Multipath Channels: CRBs for AOA and for Hybrid TOA-AOA based Methods

Achraf Mallat, J. Louveaux, L. Vandendorpe, Université catholique de Louvain, Belgium

6 Rake Reception of UWB-IR Indoor Radio with Reflector

Isamu Matsunami, Akihiro Kajiwar, Kitakyushu University, Japan

Wednesday, 27 June 2007 2:00pm - 3:40pm SECC Hall 2

WCS45P: Wireless Communications**Symposium Poster Session III****1 Optimality and Complexity of Opportunistic Spectrum**

Access: A Truncated Markov Decision Process Formulation

Dejan V. Djonin, The University of British Columbia, Canada; Qing Zhao, University of California-Davis, USA; Vikram Krishnamurthy, The University of British Columbia, Canada



- 2 Improved Revenue and Radio Resource Usage through Inter-operator Joint Radio Resource Management**
L. Giupponi, R. Agusti, J. Pérez-Romero, O. Sallent, Universitat Politècnica de Catalunya, Spain
 - 3 Robust Code Acquisition in the Presence of BOC Modulation for Future Galileo Receivers**
Marco Villanti, Claudio Palestini, Raffaella Pedone, Giovanni E. Corazza, University of Bologna, Italy
 - 4 A General Expression of Rake Receiver Performance in DS-CDMA Downlink**
Thierry Clessienne, France Telecom, France
 - 5 Cross-layer Design based Code Family Extension for CC/DS-CDMA Systems**
Li-Peng Wang, Brunel University, UK; Yang Yang, University College London, UK; Yong-Hua Song, Brunel University, UK
 - 6 Design of Collaborative Codes Achieving Space-Time Diversity**
Patrick Tooher, Hesam Khoshnevis, M. Reza Soleymani, Concordia University, Canada
 - 7 Optimizing Zero-forcing based Gain Allocation for Wireless Multiuser Networks**
Celal Eşli, Stefan Berger, Armin Wittneben, ETH Zurich, Switzerland
 - 8 Fair Scheduling for On-demand Time-critical Data Broadcast**
Chih-Lin Hu, BenQ Corporation, ROC
 - 9 Cooperative Vehicle Position Estimation**
Ryan Parker, Shahrokh Valaee, University of Toronto, Canada
 - 10 Quality of Service in Wireless Network Diversity Multiple Access Protocols Based on Virtual Time-slot Allocation**
Ramiro Samano-Robles, Mounir Ghogho, Desmond C. McLernon, University of Leeds, UK
 - 11 A Delay-bounded Dynamic Interactive Power Control Algorithm for VANETs**
Chunxiao Chigan, Jialiang Li, Michigan Technological University, USA
 - 12 Power and Rate Control Outage Based in CDMA Wireless Networks under MAI and Heterogeneous Traffic Sources**
Carlo Fischione, Royal Institute of Technology, Sweden; Matteo Butussi, University of Padova, Italy
 - 13 Cell Mobility based Admission Control for Wireless Networks with Link Adaptation**
Jing Li, Srinivas Sampalli, Dalhousie University, Canada
 - 14 Characterization of an Indoor MIMO Channel in Frequency Domain using the 3D-SAGE Algorithm**
Michail Matthaiou, David I. Laurenson, The University of Edinburgh, UK; Nima Razavi-Ghods, Sana Salous, University of Durham, UK
 - 15 Composite Frequency-offset Estimator for Wireless Communications**
Zhuo Lü, Jiandong Li, Linjing Zhao, Yao Liu, Xidian University, PRC
 - 16 Adaptive Transmit Beamforming with Space-Time Block Coding for Correlated MIMO Fading Channels**
Min Lin, Southeast University, PRC; Nanjing Institute of Telecommunication Technology, PRC; Min Li, Nanjing Institute of Communication Engineering, PRC; Luxi Yang, Xiaohu You, Southeast University, PRC
 - 17 A Distributed Scheduling Algorithm for Multiuser MIMO Systems with 1-bit SINR Feedback**
S. Sorrentino, Siemens Networks S.p.A., Italy; U. Spagnolini, Politecnico di Milano, Italy; L. Moretti, Siemens Networks S.p.A., Italy
 - 18 Efficiency-based Feedback Reduction**
Jeongho Jeon, Kyuho Son, Hyang-Won Lee, Song Chong, Korea Advanced Institute of Science and Technology, Korea
 - 19 Capacity and Coverage of Reverse Link DS/CDMA Cellular Systems with MIMO Implementations**
Jong-Han Kim, Kyung K. Bae, Jeffrey H. Reed, Virginia Polytechnic Institute and State University, USA; Annamalai Annamalai, Prairie View A&M University, USA
 - 20 Binary Block Repetition Codes and SPC Product Codes for Coded and Cooperative Diversity Systems**
Pavel Loskot, University of Wales Swansea, UK; Norman C. Beaulieu, University of Alberta, Canada
 - 21 Results for Integrals Involving m -th Power of the Gaussian Q-function over Rayleigh Fading Channels with Applications**
Redha M. Radaydeh, Jordan University of Science and Technology, Jordan; Mustafa M. Matalgah, University of Mississippi, USA
 - 22 Additional Diversity Gain in OFDM Receivers under the Influence of IQ Imbalances**
Younghwan Jin, Jihyun Kwon, Yuro Lee, Jaemin Ahn, Chungnam National University, Korea; Wongyu Choi, Dongchan Lee, Alogics Co., Ltd., Korea
 - 23 Performance Analysis of Iteratively Decoded Variable-length Space-Time Coded Modulation**
S. X. Ng, W. Liu, J. Wang, University of Southampton, UK; M. Tao, National University of Singapore, Singapore; L.-L. Yang, L. Hanzo, University of Southampton, UK
 - 24 Peak Tracking Algorithm for Galileo-based Positioning in Multipath Fading Channels**
Mohammad Zahidul H. Bhuiyan, Elena Simona Lohan, Markku Renfors, Tampere University of Technology, Finland
 - 25 A Non-cooperative Power Control Game for Secondary Spectrum Sharing**
Juncheng Jia, Qian Zhang, The Hong Kong University of Science and Technology, PRC
 - 26 Cooperative Resource Management in Cognitive Radio**
Vuk Marojevic, Xavier Revés, Antoni Gelonch, Universitat Politècnica de Catalunya, Spain
 - 27 Joint Power and Constellation Size Adaptation for Mobile Multicast Employing MQAM over Wireless Fading Channels**
Qinghe Du, Xi Zhang, Texas A&M University, USA
- Wednesday, 27 June 2007 4:00pm - 5:40pm Argyl 1
- WCS46: Wireless Medium Access Control Techniques**
- 1 Hybrid Energy-saving Algorithm Considering Silent Periods of VoIP Traffic for Mobile WiMAX**
Hyun-Ho Choi, Dong-Ho Cho, Korea Advanced Institute of Science and Technology, Korea
 - 2 An Efficient Sleep Mode Management Scheme in IEEE 802.16e Networks**
Yin Ge, Beijing University of Posts and Telecommunications, PRC; Geng-Sheng Kuo, National Chengchi University, ROC
 - 3 Queueing Performance of IEEE 802.16 Random Access Protocol with Bulk Transmissions**
Hyong-Woo Lee, Jun-Bae Seo, Korea University, Korea
 - 4 Design of a Medium Access Control Protocol for Dynamic Spectrum Access Networks**
Amitabh Mishra, Virginia Polytechnic Institute and State University, USA; Dharma P. Agrawal, University of Cincinnati, USA
 - 5 On Channel Coding Selection in Time-slotted ALOHA Packetized Multiple-access Systems over Rayleigh Fading Channels**
Chen Wei, Pingyi Fan, Tsinghua University, PRC; Khaled B. Letaief, The Hong Kong University of Science and Technology, PRC
 - 6 A Hybrid Query Tree Protocol for Tag Collision Arbitration in RFID Systems**
Jiho Ryu, Hoin Lee, Yongho Seok, Taekyoung Kwon, Yanghee Choi, Seoul National University, Korea



Wednesday, 27 June 2007 4:00pm - 5:40pm Argyl 2

WCS47: Detection and Estimation II

- 1 Turbo Multiuser Detection Based on Local Search Algorithms**
Zhiliang Qin, Kui Cai, Xiaoxin Zou, Data Storage Institute, Singapore
- 2 Optimal Pilot Symbol Distribution for Efficient and Low-complexity Doppler-shift and Doppler-rate Estimation in Bursty Transmission**
Luca Giugno, Wiser S.r.l., Italy; Francesca Zanier, Marco Luise, University of Pisa, Italy
- 3 Training Optimization for Gauss–Markov Rayleigh Fading Channels**
Sami Akin, Mustafa Cenk Gursoy, University of Nebraska–Lincoln, USA
- 4 Lower Bounds on the Capacity Regions of the Relay Channel and the Cooperative Relay-broadcast Channel with Non-causal Side Information.**
Abdellatif Zaidi, Luc Vandendorpe, Université catholique de Louvain, Belgium; Pierre Duhamel, L'École Supérieure d'Électricité, France
- 5 Low Complexity Adaptive Turbo Frequency-domain Channel Estimation for Single-carrier Multi-user Detection with Unknown Co-channel Interference**
Ye Wu, Xu Zhu, Asoke K. Nandi, The University of Liverpool, UK
- 6 An Improved Joint M-Algorithm for Single Antenna Interference Cancellation in TDMA Mobile Radio**
Thorben Detert, Rohde & Schwarz, Germany; Romain Drauge, Darmstadt University of Technology, Germany

Wednesday, 27 June 2007 4:00pm - 5:40pm Argyl 3

WCS48: Mobile Internet and IP Technologies

- 1 Cost-effective MAP Selection in HMIPv6 Networks**
WonSik Chung, SuKyoung Lee, Yonsei University, Korea
- 2 Performance Analysis of SINEMO: Seamless IP-diversity based Network Mobility**
Pulak K. Chowdhury, Abu S. Reaz, Mohammed Atiquzzaman, University of Oklahoma, USA; William Ivancic, NASA Glenn Research Center, USA
- 3 Fast Handover Scheme for Real-time Applications in Mobile WiMAX**
Wenhua Jiao, Pin Jiang, Yuanyuan Ma, Bell-Labs Research China–Alcatel-Lucent, PRC

- 4 TCP HandOff: A Practical TCP Enhancement for Heterogeneous Mobile Environments**
Xiuchao Wu, Mun Choon Chan, A. L. Ananda, National University of Singapore, Singapore
- 5 Dynamic Network Selection using Kernels**
Eric van den Berg, Praveen Gopalakrishnan, Byungsook Kim, Bryan Lyles, Telcordia Technologies, Inc., USA; Won-Ik Yeong Jin, Yeon Seung Shin, Yeong Jin Yeong Jin, Electronics and Communications Research Institute, Korea
- 6 IEEE 802.11-based Mobile IP Fast Handoff Latency Analysis**
Jiang Xie, Ivan Howitt, Izzeldin Shibeika, The University of North Carolina–Charlotte, USA

Wednesday, 27 June 2007 4:00pm - 5:40pm Boisdale 2

WCS49: Cooperative Communications III

- 1 Cooperative Digital Audio Broadcast Networks**
Ahmed Bader, TARCS Research, Jordan
- 2 Diversity and Multiplexing in Cooperative Wireless Cellular Networks**
Diego Piazza, Guido Tartara, Politecnico di Milano, Italy
- 3 On the Fundamentally Asynchronous Nature of Interference in Cooperative Base Station Systems**
Hongyuan Zhang, Marvell Semiconductor Inc., USA; Neelesh B. Mehta, Mitsubishi Electric Research Labs, USA; Andreas F. Molisch, Mitsubishi Electric Research Labs, USA; Lund University, Sweden; Jin Zhang, Mitsubishi Electric Research Labs, USA; Huaiyu Dai, North Carolina State University, USA
- 4 Space–Time Coded Cooperative Multicasting with Maximal Ratio Combining and Incremental Redundancy**
Aitor del Coso, Centre Tecnològic de Telecomunicacions de Catalunya, Spain; Osvaldo Simeone, Yeheskel Bar-ness, New Jersey Institute of Technology, USA; Christian Ibars, Centre Tecnològic de Telecomunicacions de Catalunya, Spain
- 5 A Game Theoretic Solution for Exploiting Multiuser Diversity in Cooperative Slotted Aloha**
Cristina Comaniciu, Stevens Institute of Technology, USA; Dandan Wang, Hlaing Minn, Naofal Al-Dhahir, University of Texas–Dallas, USA
- 6 Cooperative Diversity for Virtual MIMO System in Geometry-based Stochastic Channel Model**
Hongtao Zhang, Beijing University of Posts and Telecommunications, PRC; Geng-Sheng Kuo, National Chengchi University, ROC

General Symposium (with Signal Processing and Coding for Data Storage)

Monday, 25 June 2007 2:00 - 3:40pm Castle 2

GS01: Wireless Cellular Networks and Network Coding

- 1 Cooperative Concatenated Coding for Wireless Systems**
Ernest S. Lo, K. B. Letaief, The Hong Kong University of Science and Technology, PRC
- 2 Maximum-likelihood Decoding and Performance Analysis of a Noisy Channel Network with Network Coding**
Ming Xiao, Tor M. Aulin, Chalmers University of Technology, Sweden
- 3 An Improved Topology Design Algorithm for Network Coding-based Multicast Networks**
Kaikai Chi, Xiaohong Jiang, Susumu Horiguchi, Tohoku University, Japan
- 4 INTELICON: Intelligent Connectivity Framework for the Simultaneous Use of Multiple Interfaces**
Kyriakos Manousakis, Praveen Gopalakrishnan, Dave Famolari, Eric Van Den Berg, Telcordia Technologies, Inc., USA

- 5 The Potential of Using Inter-vehicle Communication to Extend the Coverage Area of Roadside Wireless Access Points on Highways**
S. Y. Wang, National Chiao Tung University, ROC
- 6 Synchronization of Single-frequency Simulcast Networks Using Network Time Protocol**
Stefano Bregni, Luciano Lacavalla, Bruno Propersi, Politecnico di Milano, Italy; Francesco Residori, SELEX Communications Prod-El S.p.A., Italy

Monday, 25 June 2007 4:00 - 5:40pm Castle 2

GS02: Internet Traffic Control and Security

- 1 Downlink TCP Performance under Cross Layer Rate and Power Allocation in Infrastructure TH-PPM UWB Networks**
Yang Liu, Yu-Kwong Kwok, The University of Hong Kong, PRC; J. Wang, The University of Kent, UK
- 2 Active Window Management: An Efficient Gateway Mechanism for TCP Traffic Control**
M. Barbera, A. Lombardo, C. Panarello, G. Schembra, University of Catania, Italy



- 3 Window-based and Rate-based Congestion Controls: A Local Stability Analysis under Variable RTT Conditions and the Proposal of an RTP-based Algorithm**
M. Borri, A. Ferrarini, M. L. Merani, University of Modena and Reggio Emilia, Italy

- 4 Dynamic Ethernet Link Shutdown for Energy Conservation on Ethernet Links**
Maruti Gupta, Suresh Singh, Portland State University, USA

- 5 Detecting HTTP Tunnels with Statistical Mechanisms**
Manuel Crotti, Maurizio Dusi, Francesco Gringoli, Luca Salgarelli, Università degli Studi di Brescia, Italy

- 6 On the Stability of the Malware Free Equilibrium in Cell Phones Networks with Spatial Dynamics**
Krishna Ramachandran, ; Biplab Sikdar, Rensselaer Polytechnic Institute, USA

Tuesday, 26 June 2007 11:00am - 12:40pm SECC Hall 2
GS03P: General Symposium and Signal Processing & Coding for Data Storage Poster Session

- 1 Bandwidth-efficient Byte Stuffing**
Jaime S. Cardoso, INESC Porto, Portugal
- 2 Speed Up Queries in Unstructured Peer-to-Peer Networks**
Zhan Zhang, Yong Tang, Shigang Chen, University of Florida, USA
- 3 A Proposal of Finger Identification Scheme Employing Intra-body Communications**
Nao Kobayashi, Jordi Agud Ruiz, Shigeru Shimamoto, Waseda University, Japan
- 4 A Novel Feedback Mechanism for Load Balanced Two-stage Switches**
Kwan L. Yeung, Bing Hu, N. H. Liu, The University of Hong Kong, PRC
- 5 A Simple Power Margin Quality Measure for Correlated Random Variates Derived from the Normal Distribution**
David J. Young, Norman C. Beaulieu, University of Alberta, Canada
- 6 Computing Maximum-likelihood Bounds for Reed-Solomon Codes over Partial Response Channels**
Richard M. Todd, J. R. Cruz, University of Oklahoma, USA
- 7 Waterfilling-like Multiplicity Assignment Algorithm for Algebraic Soft-decision Decoding of RS Codes**
Qin Huang, Jiang Wu, Chunming Zhao, Xiaohu You, Southeast University, PRC
- 8 Two Dimensional Equalizer using Parallel FIR Filters for Data Storage**
Richard Conway, University of Limerick, Ireland
- 9 Video Coding with Linear Compensation (VCLC)**
Arif Mahmood, Zartash Afzal Uzmi, Sohaib Khan, Lahore University of Management Sciences, Pakistan
- 10 Application of Soft-decision Decoders to Non-narrow-sense Reed-Solomon Codes**
Soo-Woong Lee, B. V. K. Vijaya Kumar, Carnegie Mellon University, USA
- 11 Quantization Effects in Low-density Parity-check Decoders**
Zhengya Zhang, Lara Dolecek, Martin Wainwright, Venkat Anantharam, Borivoje Nikolić, University of California-Berkeley, USA

Tuesday, 26 June 2007 2:00pm - 3:40pm Castle 2
GS04: Signal Processing and Coding for Data Storage

- 1 PRML Detection of Multi-level DVD Channels with Run-length-limited Modulation**
Hua Hu, Longfa Pan, Optical Memory National Engineering Research Center, PRC

- 2 Iterative Soft-input Soft-output MMSE Equalization for Two-dimensional Coherent Optical Memory**
Mehmet Keskinöz, Sabanci University, Turkey

- 3 Two-dimensional Generalized Partial Response Equalizer for Bit-patterned Media**
Sheida Nabavi, B. V. K. Vijaya Kumar, Carnegie Mellon University, USA

- 4 Combating Media Noise for High-density Optical Recording**
Kui Cai, Data Storage Institute, Singapore; Yong Ning Foo, National University of Singapore, Singapore; J. W. M. Bergmans, Technical University Eindhoven, The Netherlands

- 5 Analysis of Absorbing Sets for Array-based LDPC Codes**
Lara Dolecek, Zhengya Zhang, Venkat Anantharam, Martin Wainwright, Borivoje Nikolić, University of California-Berkeley, USA

Tuesday, 26 June 2007 4:00pm - 5:40pm Castle 2
GS05: Physical Layer Performance Issues

- 1 Communication Limits with Low Precision Analog-to-Digital Conversion at the Receiver**
Jaspreet Singh, University of California-Santa Barbara, USA; Onkar Dabeer, Tata Institute of Fundamental Research, India; Upamanyu Madhow, University of California-Santa Barbara, USA
- 2 ML CFO and PO Estimation in DCT OFDM Systems under Non-circular Transmissions**
Tao Cui, California Institute of Technology, USA; Feifei Gao, A. Nallanathan, National University of Singapore, Singapore; Chintla Tellambura, University of Alberta, Canada
- 3 The Effect of Imperfect Carrier Frequency Offset Estimation on OFDMA Uplink Transmission**
Zhongshan Zhang, Chintla Tellambura, University of Alberta, Canada
- 4 Statistical Simulator for Block Coded Channels with Long Residual Interference**
Natasa Blitvic, Vladimir Stojanovic, Massachusetts Institute of Technology, USA
- 5 Closed-form BER Expressions for BPSK Using MRC with Multiple Interferers in Arbitrarily Correlated Rayleigh Fading**
Xiaodi Zhang, Norman C. Beaulieu, University of Alberta, Canada
- 6 Transmit Antenna Subset Selection for Downlink MIMO Systems**
Jee Woong Kang, Samsung Electronics Co. Ltd., Korea; Hui Won Je, Kwang Bok Lee, Seoul National University, Korea

Wednesday, 27 June 2007 9:00 - 10:40am Castle 2
GS06: Packet Scheduling Algorithms

- 1 Simple and Fair Scheduling Algorithm for Combined Input-crosspoint-queued (CICQ) Switch**
Nan Hua, Peng Wang, Depeng Jin, Lieguang Zeng, Bin Liu, Tsinghua University, PRC; Gang Feng, University of Electronic Science and Technology of China, PRC
- 2 Accuracy and Dynamics of Multi-stage Load Balancing for Multipath Internet Routing**
Rüdiger Martin, Michael Menth, Michael Hemmkeppeler, University of Würzburg, Germany
- 3 Packet Dispatching Algorithms with the Static Connection Patterns Scheme for Three-stage Buffered Clos-network Switches**
Janusz Kleban, Poznan University of Technology, Poland; Hugo Santos, University of Porto, Portugal
- 4 Threshold-based Exhaustive Round-robin for the CICQ Switch with Virtual Crosspoint Queues**
Kenji Yoshigoe, University of Arkansas-Little Rock, USA

**5 Distributed Scheduling in Input Queued Switches**

Alessandra Scicchitano, Università della Calabria, Italy; Andrea Bianco, Paolo Giaccone, Emilio Leonardi, Politecnico di Torino, Italy; Enrico Schiattarella, CISCO Systems, USA

6 LOOFA-PB: A Modified LOOFA Scheduler for Variable-length Packet Switching

Afshin Shiravi, Paul S. Min, Washington University in St. Louis, USA

Wednesday, 27 June 2007 11:00am - 12:40pm Castle 2

GS07: Fairness and Efficiency in Heterogeneous Networks**1 Routing-independent Fairness in Capacitated Networks**

Gábor Rétvári, József J. Bíró, Tibor Cinkler, Budapest University of Technology and Economics, Hungary

2 Optimality of the Second Order Metrics of the M/M/2 System with Heterogeneous Service Rates

Xian Liu, University of Arkansas-Little Rock, USA

3 On the Cohabitation of Adaptive Search Radius enabled Peers with Regular eMule Peers

Ricardo Lopes Pereira, Teresa Vazão, INESC-ID, Portugal

4 Stochastic RED and Its Applications

Shan Chen, Zhen Zhou, Brahim Bensaou, The Hong Kong University of Science and Technology, PRC

5 A Capacity Efficient Local Protection Scheme for Bandwidth Guaranteed Connections

Lu Ruan, Zhi Liu, Iowa State University, USA

6 Dynamic Bandwidth Allocation for Bandwidth Asymmetry Wireless Networks

Gang Feng, University of Electronic Science and Technology of China, PRC; Xun Yang, Nanyang Technological University, Singapore

Wednesday, 27 June 2007 2:00pm - 3:40pm Castle 2

GS08: Router Design and Digital Subscriber Loop Systems**1 Scalable Router Memory Architecture Based on Interleaved DRAM: Analysis and Numerical Studies**

Feng Wang, Mounir Hamdi, The Hong Kong University of Science and Technology, PRC

2 Wide-sense Nonblocking Multiplane Baseline Switching Networks Composed of $d \times d$ Switches

Grzegorz Danilewicz, Wojciech Kabaciński, Marek Michalski, Mariusz Żal, Poznan University of Technology, Poland

3 Click on a Cluster: A Viable Approach to Scale Software-based Routers

Qinghua Ye, Mike H. MacGregor, University of Alberta, Canada

4 Performance Analysis and Evaluation of VDSL2 Systems: Band-plan Study

Hernán Córdova, Vrije Universiteit Brussel, Belgium; Teun van der Veen, TNO Information and Communications Technology, The Netherlands; Leo Van Biesen, Vrije Universiteit Brussel, Belgium

5 Computationally Efficient Optimal Discrete Bit Allocation for Medium and High Target Bit Rate DMT Transmissions

Li-ping Zhu, Xiaofeng Zhong, Yan Yao, Tsinghua University, PRC; Shi-wei Dong, Xi'an Institute of Space Radio Technology, PRC; Xiao-Zhun Cui, China Academy of Space Technology, PRC

6 Single-ended FDR to Locate and Specifically Identify DSL Loop Impairments

David E. Dodds, University of Saskatchewan, Canada

Wednesday, 27 June 2007 4:00pm - 5:40pm Castle 2

GS09: Routing Algorithms**1 Effective Shortest Path Routing for Gigabit Ethernet**

Sven-Arne Reinemo, Tor Skeie, Simula Research Laboratory, Norway

2 An Efficient Technique for Message Flooding Based on Partial Shortest-path Trees in Wired Networks

Kenji Ohtsuka, Takehiro Sato, Shigeo Shioda, Chiba University, Japan

3 Performance Analysis for Overlay Multicast on Tree and M-D Mesh Topologies

Wanqing Tu, University College Cork, Ireland

4 Exploring the Local Connectivity Preference in Internet AS Level Topology

Guoqiang Zhang, Guoqing Zhang, Chinese Academy of Sciences, PRC

5 A Distributed Hash Table based Address Resolution Scheme for Large-scale Ethernet Networks

Saikat Ray, University of Bridgeport, USA; Roch Guérin, University of Pennsylvania, USA; Rute Sofia, Siemens AG Corporation Technology, Germany

6 Improving the Efficiency of End-to-End Network Topology Inference

Xing Jin, W.-P. Ken Yiu, S.-H. Gary Chan, The Hong Kong University of Science and Technology, PRC

Cognets Workshop**Oral Presentations****1 DVB Detector for Cognitive Radio**

Loo Peng Goh, Zhongding Lei, Francois Chin, Institute for Infocomm Research, Singapore

2 Global Control Plane Architecture for Cognitive Radio Networks

Xiangpeng Jing, Dipankar Raychaudhuri, Rutgers University, USA

3 Evolution of Radio Resource Management: A Case for Cognitive Resource Manager with VPI

Marina Petrova, Petri Mähönen, Janne Riihijärvi, RWTH Aachen University, Germany

4 Structure and Optimality of Myopic Sensing for Opportunistic Spectrum Access

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

5 Performance Analysis of Primary User Detection in a Multiple Antenna Cognitive Radio

Ashish Pandharipande, Jean-Paul M. G. Linnartz, Philips Research Laboratories, The Netherlands

6 Signature-based Spectrum Sensing Algorithms for IEEE 802.22 WRAN

Hou-Shin Chen, Rutgers University, USA; Wen Gao, Thomson Corporate Research, USA; David G. Daut, Rutgers University, USA

7 Modelling Interference Temperature Constraints for Spectrum Access in Cognitive Radio Networks

Joe Bater, University College Cork, Ireland; Hwee-Pink Tan, Trinity College Dublin, Ireland; Kenneth N. Brown, University College Cork, Ireland; Linda Doyle, Trinity College Dublin, Ireland

8 Joint On-demand Routing and Spectrum Assignment in Cognitive Radio Networks

Geng Cheng, Wei Liu, Yunzhao Li, Wenqing Cheng, Huazhong University of Science & Technology, PRC

Poster Presentations**1 Cognitive Network Access using Fuzzy Decision Making**

Nicola Baldo, University of Padova, Italy; Michele Zorzi, University of Padova, Italy; University of California-San Diego, USA



2 Cooperation and Cognitive Radio

O. Simeone, New Jersey Institute of Technology, USA; J. Gambini, New Jersey Institute of Technology, USA; Politecnico di Milano, Italy; Y. Bar-Ness, New Jersey Institute of Technology, USA; U. Spagnolini, Politecnico di Milano, Italy

3 Topology Management in CogMesh: A Cluster-based Cognitive Radio Mesh Network

Tao Chen, Honggang Zhang, Gian Mario Maggio, Imrich Chlamtac, CREATE-NET, Italy

4 An Efficient FFT for OFDM-based Cognitive Radio on a Reconfigurable Architecture

Qiwei Zhang, Andre B. J. Kokkeler, Gerard J. M. Smit, University of Twente, The Netherlands

5 Evaluating Techniques for Network Layer Independence in Cognitive Networks

Muthukumaran Pitchaimani, Benjamin J. Ewy, Joseph B. Evans, University of Kansas, USA

6 Cascaded Clear Channel Assessment: Enhanced Carrier Sensing for Cognitive Radios

Soo Young Shin, Iyappan Ramachandran, Sumit Roy, University of Washington, USA; Wook Hyun Kwon, Seoul National University, Korea

7 Joint Power and Channel Minimization in Topology Control: A Cognitive Network Approach

Ryan W. Thomas, Ramakant S. Komali, Allen B. MacKenzie, Luiz A. DaSilva, Virginia Polytechnic Institute and State University, USA

Technical Programme Committee

Symposium 1:

Communications QoS, Reliability & Performance Modelling

The symposium deals with performance issues for enabling current and next-generation networks and services. The Communications Systems Integration and Modelling Technical Committee will give the CSIM Best Conference Paper Award for a selected paper from the ICC 2007 Communications QoS, Reliability and Performance Modelling symposium.

Chairs

Abbas Jamalipour *University of Sydney*

Nelson L. S. da Fonseca *State University of Campinas*

Hiroshi Ueda *Tokyo University of Technology*

Members

Ahmet Akyamac *Bell Labs, Alcatel-Lucent*

Celio Albuquerque *Fluminense Federal University*

Jussara Almeida *Federal University of Minas Gerais*

Tricha Anjali *Illinois Institute of Technology*

Koichi Asatani *Kogakuin University*

Yoshihiro Ashi *Hitachi Communication Technologies, Ltd.*

Albert Banchs *Universidad Carlos III de Madrid*

Javier Barria *Imperial College London*

Marinho Barcellos *Universidade do Vale do Rio dos Sinos*

Torsten Braun *University of Bern*

Augusto Casaca *INESC*

Periklis Chatzimisios *TEI of Thessaloniki*

Chi-Ming Chen *AT&T*

Arek Dadej *University of South Australia*

Gerard Damm *Alcatel-Lucent*

Francesco G.B. De Natale *University of Trento*

Michael Devetsikiotis *North Carolina State University*

Christos Douligeris *University of Piraeus*

Do Young Eun *North Carolina State University*

Mario Freire *University of Beira Interior*

Stefano Giordano *University of Pisa*

Fabrizio Granelli *University of Trento*

Hiroaki Harai *National Institute of Information and Communications Technology*

Go Hasegawa *Osaka University*

Toru Hasegawa *KDDI Labs.*

Tohru Hoshi *Tokyo University of Technology*

Changcheng Huang *Carleton University*

Tomohiro Ishihara *Fujitsu Laboratories Ltd.*

Tadashi Itoh *NTT*

Abbas Jamalipour *University of Sydney*

Helen Karatza *Aristotle University of Thessaloniki*

Nei Kato *Tohoku University*

Ryoichi Kawahara *NTT Service Integration Laboratories*

Aleksandar Kolarov *Telcordia Technologies*

Nelson L. S. da Fonseca *State University of Campinas*

Richard La *University of Maryland*

Miguel Labrador *University of South Florida*

Bjorn Landfeldt *The University of Sydney*

Georgios Lazarou *Mississippi State University*

Supporting TCs:

- Communications Quality & Reliability TC
- Communications System Integration & Modelling TC
- Satellite & Space Communications TC

Emilio Leonardi *Politecnico di Torino*

Jie Li *University of Tsukuba*

Michele Lima *Federal University of Pernambuco -UFPE*

Pascal Lorenz *University of Haute Alsace*

Luis Henrique Maciel Kosmowski Costa *Federal University of Rio de Janeiro*

Mario Marchese *DIST- University of Genoa*

Kenichi Mase *Niigata University*

Ashraf Matrawy *Carleton University*

Abdelhamid Mellouk *University Paris XII*

Michael Menth *University of Wuerzburg*

Michela Meo *Politecnico di Torino*

George Michailidis *University of Michigan*

Jelena Misic *University of Manitoba*

Vojislav Misic *University of Manitoba*

Seshadri Mohan *University of Arkansas at Little Rock*

Antonella Molinaro *University "Mediterranea" of Reggio Calabria*

Edmundo Monteiro *University of Coimbra*

Marie-Jose Montpetit *Motorola*

Hiroaki Morikawa *Associate Professor*

Kurenai Murakami *NEC Corporation*

Tutomu Murase *NEC Corp.*

Hajime Nakamura *KDDI R&D Laboratories Inc.*

Hidehiko Nakazato *Waseda University*

Kimio Oguchi *Seikei University*

Yuji Oie *Kyushu Institute of Technology*

Sara Oueslati *France Telecom R&D*

Symeon Papavassiliou *National Technical University of Athens*

Antonio Pescapè *University of Naples*

Samuel Pierre *Ecole Polytechnique de Montreal*

Juergen Quittek *NEC Europe Ltd*

Marcelo Rubinstein *Universidade do Estado do Rio de Janeiro*

Apostolis Salkintzis *Motorola*

Dimitrios Serpanos *University of Patras*

Mihail Sichitiu *North Carolina State University*

Harry Skianis *National Centre for Scientific Research "Demokritos"*

Dan Keun Sung *Korea Advanced Institute of Science and Technology*

Akira Takahashi *Nippon Telegraph and Telephone Corporation*

Tarik Taleb *Tohoku University*

Takao Tashiro *O F Networks*

Toshinori Tsuboi *Tokyo University of Technology*

Shahrokh Valaee *University of Toronto*

Hans van den Berg *University of Twente*



Iakovos Venieris *National Technical University of Athens*
Yannis Viniotis *North Carolina State University*
Naoki Wakamiya *Osaka University*
Wenye Wang *NC State University*
Vincent Wong *University of British Columbia*
Steven Wright *BellSouth*
Yang Xiao *The University of Alabama*
Katsunori Yamaoka *Tokyo Institute of Technology*

Tatsuya Yamazaki *National Institute of Information Communications Technology*
Tetsuya Yokotani *Mitsubishi Electric Corp.*
Homayoun Yousefi'zadeh *University of California, Irvine*
Xi Zhang *Texas A&M University, ECE Department*
Martina Zitterbart *University of Karlsruhe*
Artur Ziviani *LNCC*
Moshe Zukerman *The University of Melbourne*

Symposium 2: Communication Theory

This symposium welcomes original research papers on theoretical and applied aspects of wireless, mobile and wireline communication systems. Topics of interest address a wide range of physical layer issues including modulation, coding (such as turbo, LDPC, space-time, concatenated aspects), joint source-channel coding, synchronization, equalization (including soft and turbo-equalization), channel estimation, interference avoidance and advanced multiple access strategies. Theoretical performance analysis and design issues of multiple-input multiple-output (MIMO) systems, ultrawideband (UWB)

transmission, optical communication (such as optical CDMA, wireless optical) and cooperative diversity (including diversity/multiplexing tradeoffs, distributed coding and signal processing as applied to ad-hoc and sensor networks) will be also featured. Research results on communication theory aspects of genetics, bioinformatics and quantum information processing are warmly welcome as well.

Supporting TCs:

- Communications Theory

Chairs

Peter McLane *Queens University*
Murat Uysal *University of Waterloo*

Members

Raviraj Adve *University of Toronto*
Jeffrey Andrews *The University of Texas at Austin*
Shlomi Arnon *Ben-Gurion University of the Negev*
Huseyin Arslan *University of South Florida*
Sabah Badri-Hoeher *University of Kiel*
John Barry *Georgia Institute of Technology*
Keith Chugg *University of Southern California*
William (Bill) Cowley *University of South Australia*
Shuguang Cui *University of Arizona*
Xiaodai Dong *University of Victoria*
Saeed Gazor *Queen's University*
Norbert Goertz *University of Edinburgh*
Patrick Hayden *McGill University*
Robert Heath *The University of Texas at Austin*
Pooi-Yuen Kam *National University of Singapore*
Mehmet Keskinöz *Sabanci University*
Amir K. Khandani *University of Waterloo*
Il-Min Kim *Queen's University*
Lutz Lampe *University of British Columbia*
Erik G. Larsson *Royal Institute of Technology*
Heung-No Lee *University of Pittsburgh*
Geoffrey Li *Georgia Tech*

Tiffany Jing Li *Lehigh University*
Teng Joon Lim *University of Toronto*
John Lodge *Communications Research Centre (CRC)*
David Love *Purdue University*
Urbashi Mitra *University of Southern California*
Ross Murch *HKUST*
Rohit Nabar *Marvell*
Ravi Narasimhan *University of California, Santa Cruz*
Aria Nosratinia *University of Texas, Dallas*
Erdal Panayirci *Kadir Has University*
Lars K. Rasmussen *University of South Australia*
Jeffrey Reed *Virginia Tech*
William Ryan *University of Arizona*
Robert Schober *University of British Columbia*
Dirk Slock *Eurecom Institute*
Giorgio Taricco *Politecnico di Torino*
Chintha Tellambura *University of Alberta*
Cihan Tepedelenioglu *Arizona State University*
Sennur Ulukus *University of Maryland*
Adriaan van Wijngaarden *Bell Laboratories*
Giorgio M. Vitetta *University of Modena and Reggio Emilia*
Xiaodong Wang *Columbia University*
Armin Wittneben *ETH*
Tan Wong *University of Florida*
Yik-Chung Wu *The University of Hong Kong*
Zixiang Xiong *Texas A&M University*
Weihua Zhuang *University of Waterloo*

Symposium 3: Computer and Communications Network Security

With the advent of pervasive computer in communications networks and the proliferation of heterogeneous networks, network security has become paramount. The proposed Communications and Computer Network Security Symposium will address aspects of modeling, design, implementation, deployment, network management, and security algorithms, protocols, architectures, systems and testbeds. Original papers are invited in the area of network security, source authentication, protocols, data encryption algorithms, attack scenarios, source

mimicking, denial of service, countermeasure scenarios, link layer security, and so on. Furthermore, contributions devoted to the evaluation, optimization, or enhancement of security mechanisms for current technologies as well as devising efficient security and privacy solutions for emerging technologies are solicited.

Supporting TCs:

- Communications Security Technical Sub-Committee

Chairs

Hsiao-Hwa Chen *National Sun Yat-Sen University*
Mohsen Guizani *Western Michigan University*
Stamatios Kartalopoulos *University of Oklahoma*

Members

Loay Abusalah *University of Illinois at Chicago*
Mithun Acharya *North Carolina State University*
Davide Adami *CNIT Pisa Research Unit, University of Pisa*
Sasan Adibi *University of Waterloo*

Akshai Aggarwal *University of Windsor*
Waseem Ahmad *University of Illinois at Chicago*
Mohammed Aijaz *M.G.M.'S College of Engg., S.R.T.M. University*
Ala Al-fuqaha *Western Michigan University*
Nirwan Ansari *NJIT*
Davi Arnaut *PUCPR*
Chadi Assi *Concordia University*
Yacine Atif *Massey University*
Mohamad Badra *Laboratoire d'Informatique, de Modelisation et d'Optimisation des Systemes*



- Saewoong Bahk** Seoul National University
Andrea Baiocchi University of Roma "La Sapienza"
Yannis Bakopoulos NetNediaLab
Ezedin Barka UAE University
Dhiman Barman UC, Riverside
Kpacha Bayarou Fraunhofer Institute for Secure Information Technology
Jalel Ben-othman Université de Versailles
Driss Benhaddou University of Houston
Peter Bertok RMIT University
Raheem Beyah Georgia State University
Azzedine Boukerche Univ. of Ottawa
Chaoli Cai Western Michigan University
Christian Callegari University of Pisa
Hasan Cam Arizona State University
Joao Cangussu University of Texas at Dallas
Giannong Cao Hong Kong Polytechnic Univ
Davide Cerri CEFRIEL - Politecnico di Milano
Siu-Ping Chan University of Washington, Seattle
Chih-Hao Chen National Tsing Hua University
Thomas Chen Southern Methodist University
Bo Chen Harbin Institute of Technology
Yu Cheng Illinois Institute of Technology
Yen-Ming Chu National Tsing Hua University
Ma Chunbo Shanghai Jiao Tong University
Song Ci University of Nebraska-Lincoln
Bruno Crispo Università di Trento
Marc Dacier Institut Eurecom
Alberto Dainotti University of Napoli "Federico II"
Leonardo de Oliveira PUCPR
Mourad Debbabi Concordia University, Montreal
Xiaojiang Du North Dakota State University
Jiao Du National University of Defence Technology
Arjan Durresi Louisiana State University
El-Sayed El-Alfy KFUPM
Hatem Elhannachi Ecole Nationale des Sciences de l'Informatique
Afshin Fallahi University of Manitoba
Guangbin Fan Intel Research China
Jieyan Fan University of Florida
Chun-I Fan National Sun Yat-Sen University
Hanane Fathi Research Center for Information Security, AIST
Faramarz Fekri Georgia Institute of Technology
Alberto Ferrante University of Lugano
Simone Ferraresi University of Rome "La Sapienza" - ELSAG S.p.A.
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Stefano Giordano University of Pisa
Chao Gong University of Texas at Dallas
Manimaran Govindarasu Iowa State University
Stefanos Gritzalis University of the Aegean
Lei Guang Concordia University
Sghaier Guizani University of Quebec a Trois Rivières
Ibrahim Habib City University of New York
Mohamed Hamdi Carthage University
Zhu Han University of Maryland, College Park
Pin-Han Ho University of Waterloo
Honglin Hu Shanghai Research Center for Wireless Communications
Rose Qingyang Hu Mississippi State University
Fei Hu Rochester Institute of Technology
Jiankun Hu RMIT University
Nen-Fu Huang National Tsing Hua University
Chung-Ming Huang National Cheng Kung University
Keisuke Ishibashi NTT Corporation
Kiyohiko Ishikawa NHK (Japan Broadcasting Corporation)
Naser Jam Tehran Polytechnic university
Nasir Jamil Southern Methodist University
Ping Ji John Jay College of Criminal Justice
Xiaoqi Jia Graduate School of Chinese Academy of Sciences
Xing Jin HKUST
Di Jin University of Oklahoma
Yinan Jing Fudan University
Jiwoo Jing Graduate School of Chinese Academy of Sciences
Yoshito Kanamori Univ of Alaska, Anchorage
Anestis Karasaridis AT&T Labs
Moinul Khan Intel Corporation
Bilal Khan John Jay College of Criminal Justice, City University of New York
Mounis Khatib Institut National de Télécommunication
Jin-Ho Kim Samsung Electronics Co., Ltd.
Byong-Koo Kim Electronics and Telecommunications Research Institute (ETRI)
Kazukuni Kobara AIST
Turgay Korkmaz University of Texas at San Antonio
Dilip Krishnaswamy Qualcomm
Vladimir Kropotov Bauman University
Sanjeev Kumar University of Texas--Pan American
Fang-Chun Kuo University of Goettingen
Julien Laganier NTT DoCoMo Euro-Labs
Yuan-Cheng Lai IM, NTUST
Christopher Leckie University of Melbourne
Tsern-Huei Lee National Chiao Tung University
Youngseok Lee Chungnam National University
Ruidong Li University of Tsukuba
Xiangfang Li WINLAB, Rutgers Univ.
Na Li The Ohio State University
Yang Li Institute of Computing Technology, Chinese Academy of Sciences
Cheng Li Memorial University of Newfoundland
Frank Yeong-Sung Lin National Taiwan University
Bin Lin University of Waterloo
Yi-Hui Lin National Sun Yat-Sen University
Xiaodong Lin Snipe Networks Security
Peng Liu Pennsylvania State University
Huaping Liu Oregon State University
Danielle Liu AT&T
Zhan Liu Texas A&M University
Zhijun Liu The Ohio State University
Yali Liu University of California, Davis
Tat Lok The Chinese University of Hong Kong
Pascal Lorenz University of Haute Alsace
Kejie Lu University of Puerto Rico at Mayaguez
Miao Ma The Hong Kong University of Science & Technology
Robert Malaney University of New South Wales
Lykomidis Mastroleon Stanford University
Carlos Maziero Pontifical Catholic University of Paraná, PUCPR
Mona Mehrandish Concordia University
Mohammed Misbahuddin JawaharLal Nehru Technological University
Piyush Mishra Michigan Technological University
R. Ann Miura Stanford University
Peter Mueller IBM Zurich Research Laboratory
Biswajit Nandy Solana Networks
Nidal Nasser University of Guelph
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Hadi Otok CIISE, Concordia University
Suat Ozdemir Arizona State University
Theodoros Pagtzis University College London
Ai-Chun Pang National Taiwan University
Stefano Paraboschi University of Bergamo
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Yi Ping Shanghai Jiao Tong University
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Anand Prasad DoCoMo Euro-Labs
Neeli Prasad Center for TeleInfrastructure (CTIF)
Yi Qian University of Puerto Rico at Mayaguez
Lijun Qian Prairie View A&M University
Yi Qian University of Puerto Rico at Mayaguez
Byrav Ramamurthy University of Nebraska-Lincoln
Mahalingam Ramkumar Mississippi State University
Erwin Rathgeb Universität Duisburg-Essen
Peter Reiher University of California at Los Angeles
Slim Rekhis University of Carthage
Eric Renault Institut National des Télécommunications
Simon Pietro Romano University of Napoli Federico II



- Bo Rong** *University of Puerto Rico at Mayaguez*
Piyush Satapathy *University of California Riverside*
Guenter Schaefer *Technische Universitaet Ilmenau*
Peter Schoo *DoCoMo Euro-Labs*
Nabil Seddigh *Solana Networks*
Khushboo Shah *Nevis Networks*
Abdallah Shami *The University of Western Ontario*
Sherman Shen *University of Waterloo*
Tzu-Fang Sheu *National Tsing Hua University*
SeongHan Shin *Research Center for Information Security, AIST*
Shigeo Shioda *Chiba University*
Luo Shizhang *Beijing University of Posts and Telecom*
Guoqiang Shu *The Ohio State University*
Khaled Shuaib *UAEU*
Paulo Silva *UFSC*
Krishna Sivalingam *University of Maryland, Baltimore County (UMBC)*
Theodore Stergiou *KMPG Greece*
Koduvayur Subbalakshmi *Stevens Institute of Technology*
Chuan-Ching Sue *National Cheng Kung University*
Bo Sun *Lamar University*
Zhili Sun *University of Surrey*
Keisuke Takemori *KDDI R&D Laboratories Inc.*
Tarik Taleb *Tohoku University*
Seok Tang *Institute for Infocomm Research*
Caimu Tang *University of Southern California*
Birger Toedtman *University Duisburg-Essen*
Ozan Tonguz *Carnegie Mellon University*
Zouheir Trabelsi *UAE University*
Livia Trazza *Accenture*
Po-Hao Tsang *National Taiwan University*
Pascal Urien *Ecole Nationale Supérieure de Télécommunication*
Guillaume Urvoey-Keller *Institut Eurecom*
Giorgio Ventre *University of Napoli*
Pramode Verma *The University of Oklahoma*
- Giacomo Verticale** *Politecnico di Milano*
David Waiting *University of Cape Town*
Cheng-Xiang Wang *Heriot-Watt University*
Wenye Wang *NC State University*
Yong Wang *University of Nebraska-Lincoln*
Xueping Wang *Fudan University*
Carlos Westphall *Federal University of Santa Catarina*
Bryan Wilkins *Nova Southeastern University*
Chih-Chiang Wu *National Tsing Hua University*
Dapeng Oliver Wu *University of Florida*
Yang Xiang *Central Queensland University*
Yang Xiao *The University of Alabama*
Gaoxi Xiao *Nanyang Technological University*
Shi Xiao *Nanyang Technological University*
Jintao Xiong *University of Turabo*
Kaiqi Xiong *North Carolina State University*
Guoliang Xue *Arizona State University*
Hao Yang *IBM T.J. Watson Research Center*
Kun Yang *University of Essex*
Yang Yang *University College London (UCL)*
Wei Yang *Beijing Jiaotong University*
Yuan Yuan Yang *State University of New York at Stony Brook*
Jae-seung Yeom *Carnegie Mellon University*
Sungwon Yi *ETRI*
Seong-Moo Yoo *U of Alabama-Huntsville*
Wei Yu *Texas A&M University*
Zhang Yujun *Institute of Computing Tech. Chinese Academy of Sciences*
Xi Zhang *Texas A&M University, ECE Department*
Qingyu Zhang *University of Kentucky*
Haojun Zhang *Henan University of Technology*
Huidong Zhang *University of Electronic Science and Technology of China*
Ye Zhu *Texas A&M University*
Haojin Zhu *University of Waterloo*
Alf Zugenmaier *DoCoMo Euro-Labs*

Symposium 4:

Multimedia Communications & Home Services

Papers offering novel research contributions in any aspect of Multimedia Communications, Services and Home Networking are solicited for submission to the ICC2007 Multimedia Communications and Home Services Symposium. Papers may

present theories, techniques, applications, or practical experiences.

Supporting TCs:

- Multimedia Communications TC

Chairs

- Gary Chan** *The Hong Kong University of Science and Technology*
Pascal Frossard *Swiss Federal Institute of Technology - EPFL*
Heather Yu *Huawei Technologies (USA)*

Members

- Benjelloun Touimi Abdellatif** *France Telecom R&D*
Aftab Ahmad *Norfolk State*
Mohammed Al-Mualla *Etisalat University College*
Antonios Argyriou *Georgia Institute of Technology*
Luigi Atzori *University of Cagliari*
Ivan Bajic *Simon Fraser University*
Ali Begen *Cisco Systems*
Gary Chan *The Hong Kong University of Science & Technology*
King-Sun Chan *Curtin University of Technology*
Rajarathnam Chandramouli *Stevens Institute of Technology*
Liang Cheng *Lehigh University*
Naveen Chilamkurti *La Trobe University*
Cristina Costa *Create-Net*
Shuguang Cui *Stanford University*
Aloknath De *STMicroelectronics*
Juan Carlos De Martin *Politecnico di Torino*
Sachin Deshpande *Sharp Laboratories of America*
Mario Freire *University of Beira Interior*
Pascal Frossard *Swiss Federal Institute of Technology - EPFL*
Stefano Giordano *University of Pisa*
Xiaoyuan Gu *Technical University of Braunschweig*
Mohamed Haleem *Stevens Institute of Technology*
Hai Jiang *Princeton University*

- Xiangui Kang** *Sun Yat-sen University*
Alan Kaplan *Netovations*
Ragip Kurceren *Nokia Research, USA*
Zhu Li *Motorola Labs*
Jiangchuan Liu *Simon Fraser University*
Weiliang Liu *Qualcomm*
Yuanqiu Luo *NEC Laboratories America*
Maode Ma *Nanyang Technological University*
Hafiz Malik *Stevens Institute of Technology*
Manuel Malumbres *Miguel Hernández University*
Shiwen Mao *Auburn University*
Manohar Murthi *University of Miami*
Manuela Pereira *University of Beira Interior*
Sherif Rashad *Morehead State University*
Marco Roccetti *University of Bologna*
Joel Rodrigues *University of Beira Interior*
Dilip Sarkar *University of Miami*
Harry Skianis *National Centre for Scientific Research 'Demokritos'*
Qibin Sun *I2R*
Ravanasamudram Uma *NCCU*
Lei Wang *Washington State University*
Haohong Wang *Marvell Semiconductors*
Chonggang Wang *University of Arkansas*
Bin Wei *AT&T Labs - Research*
Yongqiang Xiong *Microsoft Research Asia*
Kai Xu *New Jersey Institute of Technology*
Fan Yang *Microsoft Research Asia*
Heather Yu *Huawei Technologies (USA)*
Yan Zhang *Simula Research Laboratory*



Symposium 5: Network Services & Operations

The concept of network convergence was developed to merge different networks into one multi-service network. This concept is becoming real using an Internet-based infrastructure and Internet protocols for transferring information. However, strategic research is still required to achieve the best integration architecture, services and operations management, and service provisioning in both wired and wireless domains. Many topics like network resilience, network and service security and availability, Quality-of-Service, or mobility management in the

future network are still widely considered by researchers, network operators, device manufacturers and service providers.

The symposium provide a forum for discussions on this and other challenging research areas concerning network operation and services in future converging networks.

Supporting TCs:

- Communications Switching & Routing TC
- Computer Communications TC
- Internet TC

Chairs

Marcus Brunner *NEC Europe Ltd.*

Burkhard Stiller *University of Zürich and ETH Zürich*

Members

Daniel Bauer *IBM Research*

Marcus Brunner *NEC Europe Ltd.*

Ken Calvert *University of Kentucky*

Georg Carle *Universitaet Tuebingen*

Claudio Casetti *Politecnico di Torino*

Hsi-Lu Chao *National Chiao Tung University*

Wei-Peng Chen *Fujitsu Laboratories*

Alexander Clemm *Cisco Systems, Inc.*

Simon Dobson *UCD Dublin*

Willie Donnelly *Waterford Institute of Technology*

Gabi Dreö *UniBwMunich*

Olivier Festor *LORIA - INRIA*

Matthias Frank *University of Bonn*

Alex Galis *University College London*

Roch Glitho *Concordia University*

Xiaoyuan Gu *Technical University of Braunschweig*

Peer Hasselmeyer *CCRL, NEC Europe Ltd.*

David Hausheer *University of Zurich*

Markus Hofmann *Bell Labs/Lucent Technologies*

James Hong *POSTECH*

David Hutchison *Lancaster University*

Salil Kanhere *University of New South Wales*

Ahmed Karmouch *University of Ottawa*

Andreas J. Kassler *Karlstad University*

Alexander Keller *IBM TJ Watson Research Center*

Ibrahim Khalil *Faculty member, RMIT University*

Youngtak Kim *Yeungnam University*

Guy Leduc *University of Liege*

Tsung-Nan Lin *National Taiwan University*

Renato Lo Cigno *Universita' di Trento*

Emil Lupu *Imperial College*

Martin May *ETH Zurich*

Michael Menth *University of Wuerzburg*

Seshadri Mohan *University of Arkansas at Little Rock*

Sándor Molnár *Budapest University of Technology and Economics*

George Pavlou *University of Surrey*

Key Pousttchi *University of Augsburg*

Aiko Pras *University of Twente*

Guy Pujolle *University of Paris 6*

Dilip Sarkar *University of Miami*

Juergen Schoenwaelder *International University Bremen*

Dimitrios Serpanos *University of Patras*

Joan Serrat *Universitat Politècnica de Catalunya*

Kohei Shiimoto *NTT*

Radu State *LORIA*

Sandra Tartarelli *NEC Europe Ltd*

Phuoc Tran-Gia *University of Wuerzburg*

Kurt Tutschku *Wuerzburg University*

Giorgio Ventre *University of Napoli*

John Vicente *Intel Corporation*

Thomas Walter *DoCoMo Euro-Laboratories*

Miki Yamamoto *Kansai University*

Kun Yang *University of Essex*

Kwan Yeung *University of Hong Kong*

Martina Zitterbart *University of Karlsruhe*

Symposium 6: Optical Networks & Systems

Research on optical systems has been gathering pace and researchers have been working to produce faster and faster transmission and switching technologies. With rapid advances in optical enabling devices and systems over the past decade, multi-terabit transport networks have now become a reality. In particular, long-haul domains have seen significant induction of advanced dense wavelength-division multiplexing (DWDM) technology. More lately, DWDM and coarse WDM (CWDM) technologies have steadily permeated into the more focused metro/regional and edge domains. A very notable and complementary development herein has also been the rapid maturation of much-improved electronic SONET/SDH grooming technologies, broadly termed as "next-generation" SONET/SDH. As these paradigm shifts take hold, related standards activities to develop unified provisioning and control-plane architectures for optical and electronic layers have seen much impetus, particularly within the IETF and ITU-T organizations. Today, one of the major bandwidth "bottlenecks" lies in the access domain, where cumbersome legacy copper/coax infrastructures pose notable scalability hurdles toward true ultra-broadband capabilities. For many years, optical technologies were considered as too expensive and non-viable for the local loop, particularly when compared to incremental upgrades of existing legacy copper/coax plants and emerging radio wireless technologies. However, given the rapid decline in optical component price-points in recent years, advanced passive optical network (PON) access architectures have also evolved,

pushing genuine fiber access all the way to the ultimate end-users. In fact, many carriers worldwide are conducting lengthy PON trials and some are even starting to offer selected ultra-broadband services to high-end users. Others are even contemplating hybrid radio/fiber access solutions to achieve a broad coverage footprint. Broadly, these trends will gain momentum and will inevitably help usher in a new era of services, e.g., grid computing, storage extension, etc.

This symposium seeks to showcase the latest developments in key open areas of optical networks and systems, and emergent service paradigms. In particular, one of the major themes will be on vertical and horizontal integration. For example, the former entails issues such as Ethernet-optical internetworking, SONET/SDH-WDM multi-granularity grooming, traffic engineering, physical-layer aware networking, application-layer optimization, etc. Meanwhile, the latter covers topics such as multi-domain interworking and grooming, hybrid wireless-optical interworking, etc. Another major theme will be high-speed transmission and switching systems. The symposium consists of peer-reviewed research papers as well as informative tutorials and workshop offerings from leading luminaries in the field.

Supporting TCs:

- Communications Switching & Routing TC
- Transmission, Access & Optical Systems TC



Chairs

Stefano Bregni *Politecnico di Milano*
Admela Jukan *UIUC*
Wojciech Kabacinski *Poznan Uni of Technology*
Suresh Subramaniam *The George Washington University*

Members

Abdullah Al-Ghamdi *National Information Centre*
Chadi Assi *Concordia University*
Andrea Bianco *Politecnico di Torino*
Pierpaolo Boffi *Politecnico di Milano*
Maite Brandt-Pearce *University of Virginia*
Stefano Bregni *Politecnico di Milano*
Franco Callegati *Università di Bologna*
Hakki Cankaya *Alcatel-Lucent, USA*
XiaoJun Cao *Rochester Institute of Technology*
Xiaowen Chu *Hong Kong Baptist University*
Gabriella Cincotti *University of Roma Tre*
Tibor Cinkler *Budapest University of Technology and Economics*
Grzegorz Danilewicz *Poznan University of Technology*
Tarek El-Bawab *Jackson State University*
Halima Elbiaze *University of Quebec at Montreal*
Georgios Ellinas *University of Cyprus*
Andrea Fumagalli *UTD*
Maurice Gagnaire *ENST Paris*
Aysegul Gencata *Istanbul Technical University*
Wayne Grover *University of Alberta*
Mohan Gurusamy *National University of Singapore*
Ibrahim Habib *City University of New York*
Mounir Hamdi *CS Dept., HKUST, KLN, Hong Kong*
Pin-Han Ho *University of Waterloo*
Brigitte Jaumard *Concordia University*
Jason Jue *University of Texas-Dallas*
Ahmed Kamal *Iowa State University*

Symposium 7:

Signal Processing & Coding for Data Storage

Signal processing and coding have been key component of data storage systems in the past (tape recording, disk drives, CD and DVD players). Recording devices simply do not work without signal processing and coding electronics. Codes and signal processing methods in data storage are unique in the sense that they need to be tailor-made to address issues in data storage: head-disk interfaces, media noise, recording physics, etc. Over the past 5 years, there has been a major shift in signal processing methods for data storage, triggered by two events:

1) The shift to perpendicular magnetic recording technology, and

Ezhan Karasan *Bilkent University*
Chin Tau Lea *Hong Kong University of Science and Technology*
Youngseok Lee *Chungnam National University*
Guido Maier *Politecnico di Milano*
Martin Maier *Institut National de la Recherche Scientifique (INRS)*

Marco Mellia *Politecnico di Torino*
Biswanath Mukherjee *Univ. of California Davis*
Hassan Naser *Lakehead University*
Wai Pang Ng *Northumbria University*
Mike O'Mahony *Essex University*
Cherkaoui Omar *University of Quebec in Montreal*
Mario Pickavet *Ghent University*
Byrav Ramamurthy *University of Nebraska-Lincoln*
Srinivasan Ramasubramanian *The University of Arizona*
George Rouskas *North Carolina State University*
Roberto Sabella *Ericsson*
Galen Sasaki *University of Hawaii*
Krishna Sivalingam *University of Maryland, Baltimore County (UMBC)*

Arun Somani *Iowa State University*
Marco Tacca *University of Texas at Dallas*
Ioannis Tomkos *AIT*
Massimo Tornatore *Politecnico di Milano*
Anna Tzanakaki *AIT*
Luca Valcarenghi *Scuola Superiore Sant'Anna*
John Veselka *Ciena Corp.*
Vinod Vokkarane *University of Massachusetts Dartmouth*
Jing Wu *Communications Research Centre Canada*
Lisong Xu *University of Nebraska-Lincoln*
Guoliang Xue *Arizona State University*
Yuanyuan Yang *State University of New York at Stony Brook*
Jun Zheng *University of Ottawa*
Wen-De Zhong *Nanyang Technological University*
Luying Zhou *Institute for Infocomm Research*

2) The penetration of magnetic data storage into consumer electronics (MP3 players, digital cameras, video recorders, etc.)

As a result, established companies that had not been in the data storage industry in the past and start-up companies are entering this exciting technical area. The symposium will present a chance for researchers in this community to present the novel approaches for signal processing and coding for data storage.

Supporting TCs:

- Signal Processing for Storage TC

Symposium 8:

Signal Processing For Communications

Supporting TCs:

- Signal Processing & Communications Electronics TC

Chairs

Said Boussakta *University of Newcastle upon Tyne*
Tomohiko Taniguchi *Fujitsu Laboratories Limited*

Members

Karim Abed-Meraim *Dept TSI, Télécom Paris*
Maaruf Ali *Oxford Brookes University*
Nallanathan Arumugam *National University of Singapore*
Mohammad Banat *Jordan University of Science and Technology*
Mohammed Benaissa *University of Sheffield*
Ahmed Bouridane *Queen's University*
Said Boussakta *University of Newcastle upon Tyne*
Joseph Cavallaro *Rice University*
Mrityunjoy Chakraborty *Indian Institute of Technology., Kharagpur*
Jinho Choi *University of Wales Swansea*

Chia-Chin Chong *DoCoMo USA Labs*
Anthony G. Constantinides *Imperial College, London*
Zoran Cvetkovic *King's College London*
Valdmar Da Rocha *University of Leeds*
Anand Dabak *DSPS R&D Texas Instruments*
Huaiyu Dai *NC State University*
Suman Das *Bell Laboratories*
Luc Deneire *University of Nice*
Ibrahim Develi *Erciyes University*
Jaafar Elmighani *University of Wales Swansea*
Anthony D. Fagan *University College Dublin*
Chuan Heng Foh *Nanyang Technological University*
Lee Garth *University of Canterbury*
Mohammad Ghavami *Kings College London*
Guixia Kang *Beijing Univ. of Posts and Telecommunications*
Erozan Kurtas *Seagate Corp*
Navid Lashkarian *Arraycomm LLC*



Yushan Li *Xidian University*
Madjid Merabti *Liverpool John Moores University*
Wai Ho Mow *Hong Kong University of Science and Technology*
Wai Pang Ng *Northumbria University*
Hung Nguyen *The Aerospace Corporation*
Omar Nibouche *University of Newcastle*
Timothy O'Farrell *University of Leeds*
Naohisa Ohta *Keio University*
Tomoaki Ohtsuki *Keio University*
Jacques Palicot *IETR/Supélec- Campus de Rennes*
Bin Qiu *Monash University*
Balaji Raghothaman *Airvana*
Dinesh Rajan *Southern Methodist University*
Tharmalingam Ratnarajah *Queen's University of Belfast*
Mathini Sellathurai *Queen's University of Belfast*
Bayan Sharif *University of Newcastle Upon Tyne*
Daniel K. C. So *University of Manchester*

M. Reza Soleymani *Concordia University*
Heidi Steendam *Ghent University*
Andrej Stefanov *Polytechnic University*
Leszek Szczecinski *INRS-EMT*
Tomohiko Taniguchi *Fujitsu Laboratories Limited*
Charalampos Tsimenidis *University of Newcastle Upon Tyne*
Ian Wells *Swansea Institute: University of Wales*
Kainam Thomas Wong *University of Waterloo*
Donglai Xu *University of Teesside*
Takaya Yamazato *Nagoya University*
Ning Yang *Teradyne, Inc.*
Jinhong Yuan *University of New South Wales*
Yuriy Zakharov *University of York*
Azzedine Zerguine *KFUPM*
Li Zhang *University of Leeds*
Xi Zhang *Texas A&M University, ECE Department*

Symposium 9: Wireless Ad Hoc & Sensor Networks

As computing and communications are converging, wireless ad hoc and sensor networks have attracted more and more attention in recent years. These networks will revolutionize information gathering and processing in both urban environments and inhospitable terrain. A wireless ad hoc network is an autonomous system consisting of mobile hosts (serving as routers) connected by wireless links. Such networks can be quickly and widely deployed to serve a multiplicity of purposes. Example applications of wireless ad hoc and sensor networks include, among others, emergency search-and-rescue operations, decision making in the battlefield and data acquisition operations. Sensor networks have already entered many aspects of our lives. Wireless sensors can be deployed in almost any environment, especially those where conventional wired sensor systems are impossible, unavailable or inaccessible, such as in inhospitable terrains, dangerous battlefields outer space or deep oceans. As a result, the last few years have witnessed a wealth of research ideas on ad hoc and sensor networks that are moving rapidly into commercialization and standardization. Such networks can be randomly and rapidly

deployed and reconfigured and easily tailored to specific applications including civilian, military, entertainment, etc. Moreover, an ad hoc architecture is highly robust to node failure and can provide a high-level of fault tolerance due to nodal redundancy and its distributed nature. Furthermore, energy efficiency can be achieved through multi-hop routing communication. Bandwidth reuse can also benefit from dividing the single long range hop to multiple short hops with each hop having a shorter range. Several challenges are standing in the way to achieving ubiquitous deployment of ad hoc and sensor networks. These include variable topology, device heterogeneity, limited power supply and the lack of effective energy-efficient design, lack of QoS and application support, etc.

This symposium aims at providing a forum for sharing ideas among researchers and practitioners working on state-of-the-art solutions to the challenges above.

Supporting TCs:

- Ad Hoc & Sensor Networks sub-TC
- Personal Communications TC

Chairs

Raouf Boutaba *University of Waterloo*
Hossam Hassanein *Queens University*
Hussein Mouftah *University of Ottawa*
Guoliang Xue *Arizona State University*

Members

Hosam Aboelfotoh *Kuwait University*
Najah Abu Ali *UAE University*
Toufik Ahmed *University of Bordeaux-1 / CNRS-LaBRI*
Ozgur Akan *Middle East Technical University*
Jamal Al-Karaki *The Hashemite University*
Robert Benkoczi *Queen's University*
Brahim Bensaou *The Hong Kong University of Science and Technology*
Luciano Bononi *University of Bologna*
Azzedine Boukerche *Univ. of Ottawa*
Torsten Braun *University of Bern*
Nirupama Bulusu *Portland State University*
Lin Cai *University of Victoria*
Surender Chandra *University of Notre Dame*
Periklis Chatzimisios *TEI of Thessaloniki*
Hsiao-Hwa Chen *National Sun Yat-Sen University*
Maggie Cheng *University of Missouri*
Xiuzhen Cheng *George Washington Univ*
Soumaya Cherkaoui *University of Sherbrooke*
Chunxiao Chigan *Michigan Tech*
Chun Tung Chou *School of Computer Science and Engineering, University of New South Wales*
Song Ci *University of Nebraska-Lincoln*
Jorge Cobb *University of Texas at Dallas*
Shuguang Cui *University of Arizona*

Sajal Das *The University of Texas at Arlington*
Floriano De Rango *University of Calabria*
Marcelo Dias de Amorim *Universite Pierre et Marie Curie - Paris 6*

Arjan Duresi *Louisiana State University*
Alon Efrat *University of Arizona*
Eylem Ekici *Ohio State University*
Tamer ElBatt *San Diego Research Center, Inc*
Ehab Elmallah *University of Alberta*
Mohamed Eltoweissy *Virginia Tech*
Guangbin Fan *Intel Research China*
Yacine Ghamri Doudane *LRSN, Ensiie*
Martin Haenggi *University of Notre Dame*
Walaa Hamouda *Concordia University*
Cynthia Hood *Illinois Institute of Technology*
Fei Hu *Rochester Institute of Technology*
Dijiang Huang *Arizona State University*
Xiaohua Jia *City Univ. of Hong Kong*
Hai Jiang *Princeton University*
Ahmed Kamal *Iowa State University*
Salil Kanhere *University of New South Wales*
Gary Kenward *Nortel*
Ibrahim Korpeoglu *Bilkent University*
Srisankar Kunniyur *Motorola*
Thomas Kunz *Carleton University*
Baochun Li *University of Toronto*
Qun Li *College of William and Mary*
Wei Li *University of Toledo*
Xiang-Yang Li *Illinois Institute of Technology*
Ben Liang *University of Toronto*
Errol Lloyd *University of Delaware*
Wenjing Lou *Worcester Polytechnic Institute*



Chenyang Lu *Washington University in St. Louis*
Peter Martini *University of Bonn*
Seapahn Megerian *University of Wisconsin Madison*
Jelena Mistic *University of Manitoba*
Farid Nait-Abdesselam *University of Sciences and Technologies of Lille*
Asis Nasipuri *University of North Carolina at Charlotte*
Elena Pagani *University of Milano*
Jianping Pan *University of Victoria*
Chiara Petrioli *University of Rome "La Sapienza"*
Byrav Ramamurthy *University of Nebraska-Lincoln*
Roberto Rojas-Cessa *New Jersey Institute of Technology*
Selvakennedy Selvadurai *University of Sydney*
Sidi-Mohamad Senouci *FT R&D*
Tarek Sheltami *KFUPM*
Sherman Shen *University of Waterloo*
Nirmala Shenoy *Rochester Institute of Technology*
Min Song *Old Dominion University*
Wen-Zhan Song *Washington State University, Vancouver*
Ivan Stojmenovic *University of Ottawa*
Weilian Su *Naval Postgraduate School*
Suresh Subramaniam *The George Washington University*
Violet Syrotiuk *Arizona State University*
Glen Takahara *Queen's University*
Jian Tang *Montana State University*
Wenye Wang *NC State University*
Yu Wang *University of North Carolina at Charlotte*
Quanhong Wang *Queen's University*

Cedric Westphal *Nokia*
Daniel Wong *Malaysia University of Science & Technology*
Vincent Wong *University of British Columbia*
Kui Wu *University of Victoria*
Hongyi Wu *University of Louisiana at Lafayette*
Yang Xiao *The University of Alabama*
Guoliang Xing *Cityu University of Hong Kong*
Cheng-Zhong Xu *Wayne State University*
Yuan Xue *Vanderbilt University*
Kun Yang *University of Essex*
Yang Yang *University College London (UCL)*
Mei Yang *University of Nevada, Las Vegas*
Yinghua Ye *Nokia Research Center*
Mohamed Younis *University of Maryland Baltimore County*
Amr Youssef *Concordia University*
Moustafa Youssef *University of Maryland*
Xiang Yu *Seevast Corp.*
Djamal Zeghlache *INT*
Qian Zhang *Hong Kong University of Science and Technology*
Junshan Zhang *Arizona State University*
Baoxian Zhang *Graduate University of the Chinese Academy of Sciences*
Beichuan Zhang *University of Arizona*
Xi Zhang *Texas A&M University*
Weiye Zhang *Arizona State University*
Yanchao Zhang *New Jersey Institute of Technology*
Jun Zheng *University of Ottawa*

Symposium 10:

Wireless Communications

Wireless communications networks and systems have been penetrating our everyday lives, spurring growing interest in new wireless technologies that are smart for tomorrow. Next generation (4G and beyond) wireless systems are building ubiquitous mobile infrastructure and new integrated multimedia services and applications with seamless roaming across networks. Wireless local and personal area networks are rolling out to support wireless internet, pervasive computing, and emerging smart wireless technologies adapted to individual needs, with content-aware computing, location-aware services and optimized network resource allocation. Tomorrow's smart

networks also motivate the open spectrum approach to spectrum access, enabled by software defined radio technology and the cognitive radio paradigm to allow unlicensed users to share spectrum with legacy spectrum users. To promote advances in wireless communications technologies, the Wireless Communications Symposium will include topics related to all aspects of wireless and mobile communications at all layers of the network protocol suite and all wireless communications systems including cellular networks, wireless LAN and PAN, ad-hoc networks, mesh networks, sensor networks, as well as satellite systems.

Chairs

Mohammed Atiquzzaman *University of Oklahoma*
Davide Dardari *University of Bologna*
Zhi Tian *Michigan Technological University*
Ruhai Wang *Lamar University*

Members

Dharma Agrawal *University of Cincinnati*
Sonia Aissa *University of Quebec, INRS-EMT*
Ozgur Akan *Middle East Technical University*
Ben Allen *University of Oxford*
Nallanathan Arumugam *National University of Singapore*
Israfil Bahceci *University of Waterloo*
Haowei Bai *Honeywell Aerospace*
Paolo Banelli *University of Perugia*
Michel Barbeau *Carleton University*
Rick Blum *Lehigh University*
Deva Borah *New Mexico State University*
Tamal Bose *Utah State University*
Andre Bourdoux *IMEC*
Raouf Boutaba *University of Waterloo*
Michael Buehrer *Virginia Tech*
Xiaojun Cao *Rochester Institute of Technology*
Dajana Cassioli *RadioLabs - University of Rome Tor Vergata*
Rajaratnam Chandramouli *Stevens Institute of Technology*
Mainak Chatterjee *University of Central Florida*
Periklis Chatzimisios *TEI of Thessaloniki*
Ning Chen *Freescale Semiconductor*
Soumaya Cherkaoui *University of Sherbrooke*

Yong Huat Chew *Institute for Infocomm Research*
Carla-Fabiana Chiasserini *Politecnico di Torino*
Woon Hau Chin *Institute for Infocomm Research*
Chia-Chin Chong *DoCoMo USA Labs*
Song Ci *University of Nebraska-Lincoln*
Andrea Conti *IEIT/CNR Univ. of Bologna, ENDIF Univ. of Ferrara*
Elena Costa *Siemens AG*
Franco Davoli *University of Genoa*
Zaher Dawy *American University of Beirut*
Floriano De Rango *University of Calabria*
Panagiotis Demestichas *University of Piraeus*
Ibrahim Develi *Erciyes University*
Anna Dinnis *University of Edinburgh*
Tolga Duman *Arizona State University*
Arjan Duresi *Louisiana State University*
Ashutosh Dutta *Telcordia Technologies*
Natalia Ermolova *HUT*
Peter Fazekas *Budapest University of Technology and Economics*
Nicholas Filer *University of Manchester*
Mario Freire *University of Beira Interior*
Hongyi Fu *Institute for Infocomm Research*
Shengli Fu *University of North Texas*
Andrea Fumagalli *UTD*
Jeney Gabor *Budapest University of Technology and Economics*
Stefano Galli *Panasonic*
Margarita Garcia *Universidad De Malaga*



Ana Garcia Armada *University Carlos III of Madrid*
Giovanni Giambene *University of Siena*
Wesley Gifford *Massachusetts Institute of Technology*
Andrea Giorgetti *University of Bologna*
Javier Gozalvez *Universidad Miguel Hernandez*
David Grace *University of York*
Sirisena Harsha *University of Canterbury*
Jahan Hassan *University of Sydney*
JoAnne Holliday *Santa Clara University*
François Horlin *Université Libre de Bruxelles*
Ekram Hossain *University of Manitoba*
Ivan Howitt *UNCC*
Jiankun Hu *RMIT University*
Rose Qingyang Hu *Mississippi State University*
Hong Huang *New Mexico State University*
Antonio Iera *University "Mediterranea" of Reggio Calabria*
Sassan Iraj *Nokia*
Syed Jafar *University of California Irvine*
S. Hamidreza Jamali *University of Tehran*
Yuming Jiang *Norwegian University of Science and Technology*
Stefan Kaiser *DoCoMo Euro-Labs*
George Karystinos *Technical University of Crete*
Amir K. Khandani *University of Waterloo*
Sooyoung Kim *Chonbuk National University*
Markku Kojo *University of Helsinki*
Ibrahim Korpeoglu *Bilkent University*
Evangelos Kranakis *Carleton University*
Bhaskar Krishnamachari *University of Southern California*
Witold Krzymien *University of Alberta / TRILabs*
Victor Kueh *Fujitsu Lab. of Europe*
Peter Langendoerfer *ihp-microelectronics*
Buon Kiong Lau *Lund University*
Daniel Lee *Simon Fraser University*
Victor Leung *The University of British Columbia*
Wanjiun Liao *National Taiwan University*
Chunmei Liu *Intel Corp.*
Bin Liu *Tsinghua University*
Gianluigi Liva *DLR (German Aerospace Center)*
Pascal Lorenz *University of Haute Alsace*
Hongli Luo *Indiana University - Purdue University Fort Wayne*
Xiaoli Ma *Georgia Institute of Technology*
Yao Ma *Iowa State University*
Allen MacKenzie *Virginia Tech*
Ranjan Mallik *Indian Institute of Technology - Delhi*
Daniela Maniezzo *University of California, Los Angeles*
Athanassios Manikas *Imperial College London*
Shiwen Mao *Auburn University*
Muralidhar Medidi *Washington State University*
Maria Luisa Merani *University of Modena and Reggio Emilia*
Hlaing Minn *University of Texas at Dallas*
Nader Mir *San Jose State University*
Jelena Misic *University of Manitoba*
Melody Moh *San Jose State University*
Antonella Molinaro *University "Mediterranea" of Reggio Calabria*
Giacomo Morabito *University of Catania*
Mohamed Moustafa Abd-El Aziz Moustafa *AIU*
Liam Murphy *University College Dublin*
Sean Murphy *University College Dublin*
John Murphy *University College Dublin*
Hung Nguyen *The Aerospace Corporation*
John Nielsen *University of Calgary*
Seong Keun Oh *Ajou University*
Oghenekome Oteri *Stanford University*
Ashish Pandharipande *Philips Research*
Ai-Chun Pang *National Taiwan University*

Enrico Paolini *DEIS, WiLAB, Univ. of Bologna*
Gianni Pasolini *IEIT-BO/CNR, University of Bologna*
Xavier Perez-Costa *NEC Network Laboratories, NEC Europe*
Lorenzo Piazza *Universita' di Roma "La Sapienza"*
Laura Pierucci *Italy*
Pedro Pinto *Massachusetts Institute of Technology*
Robert Qiu *Tennessee Tech University*
Tony Q.S. Quek *Massachusetts Institute of Technology*
Alberto Rabbachin *Centre for Wireless Communications, University of Oulu*
Dinesh Rajan *Southern Methodist University*
Hazem Refai *Oklahoma University*
Luca Reggiani *Politecnico di Milano*
Jian Ren *Michigan State University*
Muhammed Salamah *Eastern Mediterranean University*
Dilip Sarkar *University of Miami*
Jahangir Sarker *École de Technologie Supérieure*
Anna Scaglione *Cornell University*
Robert Schober *University of British Columbia*
Erchin Serpedin *Texas A&M University*
Hamid Sharif *University of Nebraska Lincoln*
Sherman Shen *University of Waterloo*
Nirmala Shenoy *Rochester Institute of Technology*
Andrej Stefanov *Polytechnic University*
Bo Sun *Lamar University*
Watcharapan Suwansantisuk *Massachusetts Institute of Technology*
Meixia Tao *National University of Singapore*
Daniele Tarchi *University of Florence*
My Thai *University of Florida*
John Thompson *University of Edinburgh*
Bingxin Tian *Indiana University-Purdue University Fort Wayne*
Murat Torlak *Univ. of Texas, Dallas*
Stavros Toupis *University of Cyprus*
Velio Tralli *University of Ferrara - Italy*
Tracy Tung *University of Technology, Sydney*
Matthew Valenti *West Virginia University*
Sriram Vishwanath *University of Texas at Austin*
Yiping Wang *Nortel Networks (US)*
Wenye Wang *NC State University*
Jiangzhou Wang *University of Kent*
R. f. Wang *Gansu Institute of Political Science and Law*
Xinbing Wang *North Carolina State University*
Li-Chun Wang *National Chiao Tung University*
Tan Wong *University of Florida*
Jingxian Wu *Sonoma State University*
Alexander Wyglinski *The University of Kansas*
Yang Xiao *The University of Alabama*
Chengshan Xiao *University of Missouri-Columbia*
Linda Jiang Xie *University of North Carolina at Charlotte*
Youyun Xu *Shanghai Jiaotong University*
Lie-Liang Yang *University of Southampton*
Liuqing Yang *University of Florida*
Yu-Dong Yao *Stevens Institute of Technology*
Boon Sain Yeo *Wavex Technologies*
Kwan Yeung *University of Hong Kong*
Fei Richard Yu *Carleton University*
Wei Yu *University of Toronto*
Alberto Zanella *CSITE-CNR, DEIS, University of Bologna*
Haibin Zhang *Shanghai Jiaotong University*
Duo Zhang *Michigan Technological University*
Zhaoyang Zhang *Zhejiang University*
Fuchun Zheng *Victoria University*
Jun Zheng *University of Ottawa*
Shengli Zhou *University of Connecticut*



General Symposium

Members

Antonio A.F. Loureiro *Federal University of Minas Gerais*
Abdullah Al-Ghamdi *National Information Centre*
Fatih Alagoz *Bogazici University*
Andrea Baiocchi *University of Roma "La Sapienza"*
Javier Barria *Imperial College London*
Samir Chatterjee *Claremont Graduate University*
Jyh-Cheng Chen *National Tsing Hua University*
Tibor Cinkler *Budapest University of Technology and Economics*
Didier Colle *Ghent University*
Gerard Damm *Alcatel-Lucent*
Itamar Elhanany *University of Tennessee*
Jaafar Elmoghani *University of Wales Swansea*
Marc Emmelmann *Technical University of Berlin*
Mario Freire *University of Beira Interior*
Emiliano Garcia *Queens University Belfast*
Giovanni Giambene *University of Siena*
David Grace *University of York*
Ram Gopal Gupta *Ministry of Communications and Information Technology*
Mohan Gurusamy *National University of Singapore*
Chin-Tser Huang *University of South Carolina*

CogNets Workshop

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 compromising 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 networking devices.

Chairs

Petri Mänonen *Aachen University, RWTH, Institute of Wireless Networks*
Saishankar Nandagopalan *Qualcomm Inc.*
Ignas Niemegeers *Delft University of Technology*
Przemyslaw Pawelczak *Delft University of Technology*
Venkatesha Prasad *Delft University of Technology*

Members

Lars Berlemann *Swisscom*
Milind Buddhikot *Bell Labs, Alcatel-Lucent*
Soodesh Buljore *Motorola Labs, Paris*
Rajarathnam Chandramouli *Stevens Institute of Technology*
John Chapin *Vanu, Inc.*
Luiz A. DaSilva *Virginia Polytechnic Institute and State University*
Hugo de Graaf *Twente Institute for Wireless and Mobile Communication*
Sudhir Dixit *Nokia Research Center*
Linda Doyle *Trinity College Dublin*
Magda El Zarki *University of California at Irvine*
Joseph Evans *University of Kansas*
Kvs Hari *Indian Institute of Science*
Sonia Heemstra de Groot *University of Twente*
Ramin Hekmat *Delft University of Technology*
Shankar Hn *(i) PES Institute of Technology, Bangalore*

Youssef Iraqi *Dhofar University*
Gabriel Jakobson *Altusys Corp.*
Andreas Kassler *Karlstad University*
Abdelhamid Mellouk *University Paris XII*
Edmundo Monteiro *University of Coimbra*
Rohit Negi *Carnegie Mellon University*
Jose Neuman *UFC*
Algirdas Pakstas *London Metropolitan University*
Georgios Papadimitriou *Aristotle University*
Tommaso Pecorella *CNIT*
Aiko Pras *University of Twente*
Joel Rodrigues *University of Beira Interior*
Said Soulhi *Ericsson*
Daniele Tarchi *University of Florence*
Kainam Thomas Wong *University of Waterloo*
Steven Wright *BellSouth*
Weidong Wu *Huazhong University Of Science and Technology*
Guoliang Xue *Arizona State University*
Xiaobo Zhou *University of Colorado at Colorado Springs*
Weihua Zhuang *University of Waterloo*
Piotr Zwierzykowski *Poznan University of Technology*

CRN paradigm has been trying also to gain industrial relevance through the Cognitive Radio work done especially in the USA. The workshop aims to bring in together both long-term academic and shorter term industrial viewpoints. It is required to emphasize particular as well as general aspects towards CRN. The need is to bring together all the efforts resulting in a cohesive approach for CRN.

This workshop aspires to provide a platform in this direction. We select, from the submissions, a set of papers discussing novel ideas that should not only analyze the issues in a CWN but also incorporate a clear direction towards the implementation of the CRN systems. This workshop brings together researchers, practitioners and the early proponents of CR. Since this workshop is held under the auspices of ICC, we expect many key persons in this field to be present. The workshop will be planned so as to allow more interactions amongst the participants rather than a conference would.

Fokke Hoeksema *University of Twente*
James Hoffmeyer *Western Telecom Consultants, Inc.*
Gerard Janssen *Delft University of Technology*
Friedrich Jondral *Communications Engineering Lab, University of Karlsruhe*
Bill Krenik *Texas Instruments*
Xin Liu *University of California, Davis*
Liangping Ma *San Diego Research Center, Inc.*
Allen MacKenzie *Virginia Tech*
Stefan Mangold *Swisscom Innovations*
Michael Marcus *Marcus Spectrum Solutions*
Markus Muck *Motorola Labs*
Luis Muñoz *University of Cantabria*
Keith Nolan *Trinity College Dublin*
Neeli Prasad *Center for TeleInfrastructure (CTIF)*
Muralishankar Rangarao *P. E. S. Institute of Technology*
Jeffrey Reed *Virginia Tech*
Chien-Chung Shen *University of Delaware*
Koduvayur Subbalakshmi *Stevens Institute of Technology*
Adam Wolisz *Technical University of Berlin*
Alexander Wyglinski *The University of Kansas*
Chunsheng Xin *Norfolk State University*
Honggang Zhang *Create-Net*
Qing Zhao *University of California at Davis*
Haitao Zheng *Univ. of California, Santa Barbara*
Michele Zorzi *University of Padova*



Exhibitors

The Organising Committee of ICC2007 and the IEEE Communications Society gratefully acknowledge the welcome support provided the following ICC2007 exhibitors.

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web site: www.ititechmedia.com

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2007 will mark the 50th Anniversary of the IEEE Global Telecommunications Conference. The theme of IEEE GLOBECOM 2007, "Innovate - Educate - Accelerate," exemplifies what we will accomplish during this special anniversary. The conference will be held in Washington, D.C., providing participants a unique opportunity to explore the Capital city.

web site: www.comsoc.org/confs/globecom/2007

ICC 2008 ORGANISING COMMITTEE



The 2008 IEEE International Conference on Communications (ICC 2008) will be held in Beijing, China, from 19-23 May, in the year of the Beijing Olympic Games, with the theme "Communications: Faster-Higher-Stronger". The program will feature major symposia, Application Sessions, Tutorials, and Panel Discussions.

web site: www.ieee-icc.org/2008



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The IEEE Communications Society is the organization of choice for communications and related professionals throughout the world.

The Society promotes the advancement of science, technology and applications in communications and related disciplines. It fosters presentation and exchange of information among its members and the technical community throughout the world, through the publication of journals and magazines, such as IEEE Communications Magazine and Transaction on Communications, and the organization of conferences, such as IEEE International Conference on Communications and IEEE GLOBECOM. The Society maintains the highest standard of professionalism and technical competency. For a complete listing of ComSoc member benefits, see our website.

web site: www.comsoc.org

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IEEE Engineering Management Society is one of IEEE's 44 Societies/Councils. This Society addresses Management issues which are faced by engineers. In 2008 the Society will transition into the IEEE Technology Management Council.

The field of interest of the Technology Management Council, encompasses management sciences and practices. It includes advancing the practice of engineering and technology management as a professional discipline, encouraging theoretical and conceptual developments for the management of organizations with a significant engineering or technical content, and promoting high professional standards among its members.

The current President of the Engineering Management Society is Professor Tariq S Durrani, the Executive Chair of ICC-007.

web site: <http://www.ewh.ieee.org/soc/ems/>

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The Institution of Engineering and Technology is the largest professional engineering society in Europe, with approximately 150,000 members worldwide. A not-for profit organisation, the Institution publishes over 20 journals, a prestigious programme of books, conference proceedings, the renowned IEE Wiring Regulations and the Inspec bibliographic database. Contact: Tony Donegan, Managing Editor: tdonegan@theiet.org

web site: www.theiet.org

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web site: NSL.csie.nctu.edu.tw/nctuns.html

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Steepest Ascent is a company focused on the design and development of innovative DSP systems for communications. In recent years the company has run projects from concept to both hardware and software delivery on Bluetooth, 3G, cdma2000, 802.1x, as well as more bespoke implementations of wireline communication systems operating with 1000's of channels. The company's expertise ranges from DSP theory and algorithm design, to intimate knowledge of the physical layers of various mobile and wireless communication standards. The company also has a number of software products available, including libraries for cdma2000, 3G, Adaptive Equalisation and also a complete DSP simulation to VHDL implementation library – HDS. Steepest Ascent is also a well know provider of technical short courses and short term consulting projects.

web site: www.steepestascent.com

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web sites: www.visitscotland.co.uk, www.seeglasgow.com

WIRELESS INNOVATION



web site: www.scotlandistheplace.com

Wireless Innovation is Scotland's national initiative for wireless and mobile technologies which provides support to over 140 wireless and mobile companies across Scotland, out of its base at the multiple-award winning Hillington Park Innovation Centre.

Operated by Innovation Centres (Scotland) Ltd (ICS), the UK established business incubator of the year 2006, Wireless Innovation's team of dedicated market experts help Scottish wireless and mobile developers understand market trends, technology challenges, and identify new routes to market.

Mobile and wireless technology is one of the fastest growing and dynamic sectors in the world. Scotland has a rapidly growing wealth of talent and expertise in this field, and Wireless Innovation's market intelligence, business and product development services are helping companies succeed in this new and evolving marketplace.

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Conference Information

Registration Desk Opening Hours

The registration desks will be located in the SECC and will be open at the following times:

Sunday 24th June: 08.00hrs – 10.00hrs (Crowne Plaza)
Sunday 24th June: 14.00hrs – 19.00hrs (SECC)
Monday 25th June: 07.30hrs – 18.00hrs (SECC)
Tuesday 26th June: 07.30hrs – 18.00hrs (SECC)
Wednesday 27th June: 07.30hrs – 18.00hrs (SECC)
Thursday 28th June: 07.30hrs – 18.00hrs (Crowne Plaza)

All attendees and accompanying guests must register and receive a conference badge in order to participate in the conference. **Please wear your badge at all times during ICC-2007.**

Meals

Please note that lunch is not included in the conference registration fee however there will be various cash catering outlets available in the SECC and surrounding hotels.

Coffee Breaks

Coffee breaks will be provided in the exhibition area situated in Hall 2 in the SECC.

Speakers Check-In Room

Presenters must check-in their presentations either on a memory stick or CD to the speaker check-in room at least 4 hours before their presentation. Please note there will be no facilities for overhead projection or 35mm presentation.

Poster Displays

Poster boards are 94cm wide and 240cm high, therefore the dimensions of your poster should be 90cm by 150cm.

Internet Café/Wireless Access

The internet café will be located in the exhibition area and will be available from 14.00hrs – 19.00hrs on Sunday 24th June, 09.00hrs to 18.00hrs on Monday 25th June and Tuesday 26th June and 09.00hrs to 16.00hrs on Wednesday 27th June. Wireless access will also be provided for ICC 2007 delegates within the SECC for the duration of the conference. Significant effort has

been taken to ensure that wireless provision is sufficient to meet the needs of ICC 2007 delegates. However, given the number of conference attendees, it is not possible to make absolute guarantees with regards to wireless access and connectivity quality may vary during the course of the conference.

Language

The conference language will be English. Simultaneous translation will not be provided.

Currency and Credit Cards

The currency in the UK is GBP Sterling. Cash may be exchanged in banks and exchange offices during office hours. The official exchange rate is listed daily at banks and exchange offices. All major credit cards are accepted at most hotels, restaurants and shops.

Tips

It is customary to give tips in restaurants (usually 10% of the total bill). Hotel room service personnel may also expect tips depending on the guests' discretion. Bar tenders would not expect to be tipped.

VAT

All purchases in the UK, with the exception of food and books, are subject to VAT which increases the cost of an item by 17.5%. Visitors from non-EU countries can claim a refund of VAT from selected shops on goods to be taken out of the country under the Retail Export Scheme. For information on the scheme, please visit the HM Customs and Excise web site: www.hmrc.gov.uk

Insurance

The conference cannot accept liability for personal injuries or for loss or damage to property belonging to delegates, either during, or as a result of the meeting. Please check the validity of your own personal insurance before travelling.

Smoking

On Sunday March 26, 2006 Scotland introduced a new law which bans smoking in public places. The law includes all enclosed or partly enclosed public areas.