IEEE VTS

Connecting the Mobile World

IEEE

*The 71st IEEE
Vehicular Technology Conference*

Final Programme

VTC2010-Spring
TAIPEI
The Intelligent Mobile World

16 – 19 May 2010

Taipei, Taiwan

Welcome from the General Chair

The organizing committee and the IEEE Taipei Section welcome you to Taipei. It is our pleasure to host the 2010 IEEE 71st Vehicular Technology Conference.

The aim of this conference is to provide a forum for researchers, leaders, and engineers from academia and industry to present new ideas as well as nurture future cooperation through technical paper presentation, panel discussions, and tutorials.

Also, the 3rd IEEE WiVeC symposium is co-located with this VTC and will offer participators the opportunity to learn and discuss the latest technologies in vehicular communications.

Taipei is the capital city of Taiwan located in the north of the island. It has famous museums, beautiful scenery, and gourmet food. The city has the second highest skyscraper in the world and is vibrant with life. The National Palace Museum, ranked as one of the four best museums in the world, is a must see place for the first-time visitors. There are several night markets within walking distance of the MRT (subway) station that offer local delicacies, clothing, etc. You can take the high speed rail train to other parts of Taiwan to visit the famous Sun Moon Lake, Mount Ali, and the Yu Mountain. While in Taiwan, you can enjoy the abundance of world-class hot springs easily accessible in and around the city.

The committee has worked enthusiastically to put together an exciting program. You will observe the recent research results in telematics and experience the newly launched WiMAX application services. Thank you for coming to the IEEE 71st Vehicular Technology Conference and enjoy your stay in Taiwan.

Jingshown Wu, *General Chair*
VTC2010-Spring

Welcome from the Technical Program Chair

On behalf of the Technical Program Committee (TPC), it is my pleasure to welcome you to the 2010 IEEE 71st Vehicular Technology Conference (VTC2010-Spring) in Taipei, Taiwan. The conference theme is "The Intelligent Mobile World," which captures very well the future goals and technology challenges in wireless and mobile communications. To address this theme, our technical program is formed through an international array of high quality papers.

There were 1203 manuscripts submitted for the conference from about 40 countries throughout the world. All the submitted papers were thoroughly and independently reviewed in accordance with standard blind review practices. With the help from 466 TPC members and 2387 voluntary reviewers, a total of 4187 reviews were received, giving an average of more than 3 independent reviews per paper. Based on the results of this rigorous review process, 553 papers have been selected for inclusion in the technical program, with 345 papers forming 69 oral sessions and 208 papers forming 24 poster sessions. Besides these regular sessions, VTC2010-Spring also features world-class keynote/plenary speeches, panels, workshops, and tutorials that reflect the current global situation as well as the technology research and development trends in wireless and mobile communications to reach "The Intelligent Mobile World." I believe you will find our technical program interesting and valuable.

I wish to thank all authors who submitted their papers to VTC2010-Spring. The high quality of these submissions is a guarantee of success for the conference. I would also like to thank all the TPC members and reviewers for helping review the submissions. Particular thanks go to our conference Track Chairs who organized a very efficient and smooth review process: Nirwan Ansari and Jang-Ping Sheu (Ad-Hoc and Sensor Networks); Andreas F. Molisch and Jenn-Hwan Tarng (Antennas and Propagation); Ekram Hossain and Y.-W. Peter Hong (Cognitive Radio and Cooperative Communications); Phone Lin and Klaus David (Mobile Applications and Services); Marina Ruggieri and Ren-Hung Hwang (Mobile Satellite and Positioning Systems); David W. Lin and Guan Yong Liang (Multiple Antenna Systems and Space-Time Processing); Mamoru Sawahashi, Sau-Gee Chen, and Hsiao-Chun Wu (Transmission Technologies); Bih-Yuan Ku (Transportation); Wai Chen and Hsiao-Kuang Wu (Vehicular Electronics and Telematics); Xianbin Wang and Hsuan-Jung Su (Wireless Access); Neeli R. Prasad and Tsung-Nan Lin (Wireless Networks). Moreover, I am grateful to the TPC Co-Chairs, Wanjiun Liao and Li-Chun Wang, and the Publications Co-Chairs, Chih-Peng Li and Y.-W. Peter Hong, for their constant support during the preparation of the technical program. Without all these people's contributions, the fine technical program of VTC2010-Spring would not have been possible!

Finally, I would like to express my sincere appreciation to your participation in VTC2010-Spring and hope you will enjoy a wonderful experience in Taipei.

Chin-Liang Wang, *Technical Program Chair*
VTC2010-Spring

Welcome from the VTS President

On behalf of the IEEE Vehicular Technology Society, it is my pleasure to welcome you to the IEEE 71st Vehicular Technology Conference in Taipei, Taiwan. The goal of the conference is to bring together researchers in the field of vehicular technology from the whole world.

Taipei is the capital of Taiwan located at the island in the Pacific Ocean. It is a modern as well as historic city connected to high speed railroad and airports which, I am sure, is a great location for the Vehicular Technology Conference 2010-Spring. The Vehicular Technology Conference has been the flag ship conference of the IEEE Vehicular Technology (VT) Society for over sixty years. For the last eleven years it has been successfully held twice a year with geographical diversity: fall conferences in North America and spring conferences in Asia Pacific and Europe.

The VT Society has its unifying theme of 'mobility.' Under the slogan of "Connecting the Mobile World," the VT Society is committed to all aspects of mobility related to wireless communications, vehicle electronics, motor vehicles, and land transportation. The VTS has been very successful recently in publishing its Transactions on Vehicular Technology with many quality papers submitted and its review process time shortened as well as extending its conference activities. We invite you to get involved within VTS as a member to help to shape the future of your profession.

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

I wish to convey a special thank you to the General Chair of the IEEE 71st Vehicular Technology Conference, Jingshown Wu, and the Technical Program Chair, Chin-Liang Wang, and other members of the Committees for their thoughtful implementation of the excellent conference program.

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

Jae Hong Lee, *President*
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Ghassan Kraidy
Daniel Krajzewicz
Charles Krasic
Bujar Krasniqi
Kurtis B. Kredo II
Michal Kryczka
Adlen Ksentini
Bih-Yuan Ku
Chui Choon Ivan Ku
Mong-Kai Ku

Willy Ku
Kuang-Hao
Hiroyuki Kubo
Stepan Kucera
Riichi Kudo
Ajay Kulkarni
Sanjay Kumar
Zhong Kun
Chun-Ta Kung
Chi Kuo
Wen-Hsing Kuo
Ajeesh Kurian
Janne Kurjenniemi
Thomas Kürner
Ernest Kurniawan
Takuya Kusaka
Katsutoshi Kusume
Yongjun Kwak
Maurice Kwakkernaat
Victor M.K. Kwan
Raymond Kwan
Andres Kwasinski
Hyukjoon Kwon
Hyuck M. Kwon
Seok-Chul Kwon
Sewoong Kwon
Taehoon Kwon
Taek-Jin Kwon
Anastasios Kyrillidis
Chi-Anh La
Mohamed Laaraiedh
Ákos Ladányi
I-Wei Lai
Kuei-Chiang Lai
Lifeng Lai
Yuan-Cheng Lai
Jenn-Kaie Lain
M.K. Lakshmanan
Subhash
　Lakshminarayana
Yang Lan
Zhou Lan
Yidong Lang
Amine Laourine
Anna Larmo
Federico Larroca
Vincent K.N. Lau
David Laurenson
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Long Le
Long Le
Nikolai Lebedev
Kwang Bok Lee
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Kyung Chang Lee
Chiao-Wei Lee
Chia-Peng Lee
Chien-Min Lee
Chong-You Lee
Chung-Pi Lee
Doug Lee
Jeng Farn Lee
Gilbom Lee
Chao-Hsien Lee
Dong Heon Lee
Hojin Lee
Jae Hong Lee
Hoojin Lee
Jung Hoon Lee
Hyoungjoo Lee
Myung J. Lee
John Lee
Jong-Hyouk Lee
Joong-Hyup Lee
JungRyun Lee
KeHan Lee
Keonkook Lee
Teck Kiong Lee
Min Lee
Namyoon Lee
Shih-Kai Lee
Shi-Yong Lee
Sunyoung Lee
Ta-Sung Lee
Wen-Li Lee
Yinman Lee
Yong-Hwan Lee
You-Seok Lee
Andreas Lehner
Ming Lei
Sheng Lei
Yi-Xue Lei
Zander Zhongding Lei
Tim Leinmueller
Jouko Leinonen

Ivan Lequerica
Jenq-Shiou Leu
Yee Hong Leung
Bo Li
Cheng Li
Chih-Peng Li
Chi-Min Li
Chuxiang Li
Dagang Li
Fan Li
Gang Li
Gen Li
Haibin Li
Hao Li
Honggang Li
Hsueh-Jyh Li
Husheng Li
Husheng Li
Jia Li
Jiajun Li
Jialing Li
Jin-Hao Li
Jin-Haw Li
Jun Li
Jung-Shian Li
Kang Li
Ping Li
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Ruidong Li
Wei Li
Wei-Yu Li
Xiaowei Li
Y Li
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Yun Li
Zheng Li
ZhongNian Li
Zhuoqun Li
Ben Liang
Hao Liang
Jui-Chi Liang
Xuedong Liang
Yang-wen Liang
Hung-Jen Liao
Wei-Shun Liao
Wen-Hung Liao
Guan-Hsiung Liaw
Fidel Liberal
Federico Librino
Yao-Nan Lien
Che Lin
Chia-Yu Lin
Chi-Sheng Lin
Chow-Sing Lin
Chung-Wei Lin
Chun-Tao Lin
David Lin
Ding-Bing Lin
Fei Lin
Hsin-De Lin
Hsin-Piao Lin
Hsuanyu Lin
Jiaru Lin
Jung-Mao Lin
Mao-Chao Lin
Peng Lin
Qin Lin
Shiang-Jiun Lin
Shih-Chun Lin
Shun-Yun Lin
Sung-Han Lin
Tsung-Nan Lin
Wei-Lun Lin
Yuh-Chung Lin
Yung-Chun Lin
Janne Lindqvist
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Wing-Kuen Ling
Yibei Ling
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Charan Litchfield
Ai-Hsuan Liu
Bin Liu
Bing-Hong Liu
Liu Bo
CG Liu
Chia-Horng Liu

Chun-Hung Liu
Chunmei Liu
Chi Harold Liu
Hongju Liu
Huaping Liu
Hui Liu
J.C. Liu
Jianhan Liu
Juan Liu
Liang Liu
Liu Liu
Ming-Wei Liu
Qijia Liu
Ruoheng Liu
Siqian Liu
Ting-Li Liu
Tingting Liu
Tsung-Hsien Liu
Wei Liu
Wei-Cheng Liu
Wen-Jiunn Liu
Xian Liu
Xijie Liu
Yong Liu
Yunxue Liu
Yunzhong Liu
Zhijia Liu
Zong-Hua Liu
Gianluigi Liva
Maduranga Liyanage
Mariano Lizarraga
Shou-Chih Lo
Chun-Hao Lo
Andrew Logothetis
Waslon Terllizzie A.
  Lopes
Miguel López-Benítez
F. Javier Lopez-
  Martinez
Susana Loredo
Salvatore Loreto
Pavel Loskot
Yves Lostanlen
Tze-Ping Low
Alexander Lozhkin
Hoang-Yang Lu
Jui-Han Lu
Lu Lu
Zongtao Lu
Michael Luby
Hui Luo
Jun Luo
Jun Luo
Tao Luo
Xingzai Lv
Wing-Kin Ma
Xiaoqiang Ma
Yao Ma
Yuanyuan Ma
Zhiyao Ma
Hoda Maalouf
Helka Maattanen
Renita Machado
Andreas Maeder
Fumiaki Maehara
Behrouz Maham
Behrouz Maham
Behrad Mahboobi
AKM Mahtab Hossain
Laurence Mailaender
Manoranjan Majji
Behrang Nosrat
  Makouei
Fareq Malek
Sina Maleki
Konstantinos Maliatsos
Aarne Mämmelä
Abdelhamid Mammeri
HAGIWARA Manabu
Stefano Mangione
Pradeep Kumar Mani
Petri Manninen
Kyriakos Manousakis
Jawad Manssour
Shau-Gang, Mao
Zhiwei Mao
Frédéric Marache
Mohamed Marey
Ninoslav Marina
Nestor Mariyasagayam
Philippa A. Martin
Richard Martin
Tsuguo Maru
Takashi Maruyama

Philippe Mary
Alice Masini
Barbara Masini
Alireza Masoum
Ahmed Masri
Daniel Massicotte
Lawrence Materum
Deepa Mathew
P. Takis Mathiopoulos
Ichiro Matsuda
Takahiro Matsuda
Tad Matsumoto
Tadashi Matsumoto
Wataru Matsumoto
Luigi Mattellini
Jari Mattila
Gerald Matz
Sylvie Mayrargue
Franco Mazzenga
Gianluca Mazzini
Gene McHale
Steve McLaughlin
Jonas Medbo
Christian Mehlführer
Najmehh forouzandeh
  Mehr
Hamid Mehrvar
Neelesh Mehta
Saurabh Mehta
Tiago Hipkin Meireles
Maarit Melvasalo
Shanthy Menezes
Gordhan Das
  Menghwar
Christian Mensing
Danilo Merlanti
Wessam Mesbah
Farhad Meshkati
Geoffrey Messier
Ruiqin Miao
Emmanouel Michailidis
Diomidis
  Michalopoulos
Bartosz Mielczarek
Jan Mietzner
Nobuhiko Miki
Vasileios Miliotis
João Paulo Miranda
Alireza Mirzaee
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Patrick Mitran
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Saleh Mobayen
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Manar Mohaisen
Abbas Mohammadi
Abbas Mohammed
Azfar Moid
Martti Moisio
Andreas F. Molisch
Daniele Molteni
Paula Monasterio-
  Huelin Romero
Bishwarup Mondal
Francisco Monteiro
Marco Monti
Rodrigo Moraes
Nektarios Moraitis
Michele Morelli
Marco Moretti
Akihito Morimoto
Simone Morosi
Ed Mortlock
Carlos Mosquera
Seyed Abolfazl
  Motahari
Navid Mir Motahhary
Jules Merlin Mouatcho
  Moualeu
Mohammad
  Movahhedian
Imen Mrissa
Markus Mück
Abdurazak Mudesir
Raghuraman
  Mudumbai
Andreas Mueller
Christian M. Mueller

Sami Muhaidat
Amitav Mukherjee
Asish K
  Mukhopadhyay
Ali Muqaibel
Hideshi Murai
Hidekazu Murata
Robert Murawski
Maurizio Murroni
Siva Muruganathan
Claus Muschallik
Omar Muwafaq Mustaf
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Hiroyuki Nakase
Hidehisa Nakayama
Haewoon Nam
Sung Sik Nam
Sairamesh Nammi
Shusuke Narieda
Abhilaha S Narote
Alberto Nascimento
Raouia Nasri
Youssef Nasser
Keivan Navaie
Andres Navarro
Marc C. Necker
Nikolai Nefedov
Ali Nezampour
Chan-Wah Ng
Derrick Wing Kwan Ng
Kim Piau Ng
Soon Xin Ng
Hoang Anh Ngo
Hien Quoc Ngo
Huan Cong Nguyen
Van Duc Nguyen
Duy H. N. Nguyen
Trung Thanh Nguyen
Thang Van Nguyen
Hung Viet Nguyen
Marios Nicolaou
Jarno Niemelä
Jari Nieminen
Yogesh Nijsure
Reza Nikjah
Daisuke Nishikawa
Hiroshi Nishimoto
Toshihiko Nishimura
Bo Niu
Dusit Niyato
Josef Noll
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Josiane Nzouonta
Alexandra Oborina
Hideki Ochiai
Yoshiaki Ofuji
Dong-Chan Oh
Jong-Ee Oh
Jongtaek Oh
Seong Keun Oh
Seong-Jun Oh
Takeo Ohgane
Eckhard Ohlmer
Shuichi Ohno
Tomoaki Ohtsuki
Yusuke Ohwatari
John Rajeev Ojha
Minoru Okada
Eiji Okamoto
Naoto Okubo
Rodolfo Oliveira
Joan Olmos
Magnus Olsson
Eng Hwee Ong
Fumie Ono
Lucia Orozco
Udesh Oruthota
Afif Osseiran
Ayoub Otmani
Nobuaki Otsuki
Hadi Otrok
Ouachani Ilham

Yuan Ouyang
Berna Ozbek
Murat Kaan Özcan
Ozcan Ozturk
Sangheon Pack
Hung-Ta Pai
Alexander Paier
Kari Pajukoski
Claudio Enrico Palazzi
Jacques Palicot
Chengkang Pan
Susan Juan Pan
JY Pan
Miao Pan
Peng Pan
Athanasios
  Panagopoulos
Ali Y. Panah
Tarkesh Pande
Ai-Chun Pang
Francesco Pantisano
George Pantos
Enrico Paolini
George Papadopoulos
Christos Papageorgiou
Konstantinos
  Papakonstantinou
Nikolaos Papandreou
Apostolos
  Papathanassiou
Daeyoung Park
Hyuncheol Park
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JinSoo Park
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Seung-Jong Park
Gi Yoon Park
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Vishal M. Patel
Michael Pattinson
Przemysław Pawełczak
Ho Huat Peh
Yukui Pei
I-Hsuan Peng
Ronghui Peng
Wei Peng
Zhang Peng
Zhu Pengcheng
Harri Pennanen
Adelino Pereira
Jesús M. Pérez
Maria D. Perez-Guirao
Jordi Perez-Romero
Heiko Perkuhn
Steven Peters
Stephan Pfletschinger
Antonis Phasouliotis
Caleb Phillips
See-May Phoong
Phond Phunchongharn
Kandaraj Piamrat
Laura Pierucci
Prashant Pillai
Gema Piñero
Li Ping
Wu Ping
Mylene Pischella
Zsolt Polgar
Valentina Polli
Sofie Pollin
Sandeep Ponnuru
Dana Porrat
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Neeli R. Prasad
R Venkatesha Prasad
Nuno Pratas
Serguei Primak
Sampath Priyankara
Pavel Prochazka
Magnus Proebster
Chutima Prommak
Di Pu
Daniele Puccinelli
Beatriz Pulido
Rethnakaran
  Pulikkoonattu
Man-On Pun
Ali E. Pusane
Ramesh Pyndiah
Jae-Young Pyun

Yinan Qi
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Fei Qin
Jian Qiu
Ling Qiu
Lin Qu
Shouxing Qu
Tony Q.S. Quek
Daniele Quercia
Diogo Quintas
François Quitin
Alberto Rabbachin
Emanuel Radoi
Giuseppe Raffa
Md. Jahidur Rahman
Mahmudur Rahman
Brad Rainbolt
Lahatra
  Rakotondrainibe
Ramya Ramamoorthy
Chandrasekharan
  Raman
Alejandro Ramirez
Jaume Ramis
Jesús Ramón Pérez
Sundeep Rangan
Dan Raphaeli
Alessandro Raschellà
Tinku Rasheed
Lars Rasmussen
Hamed Rasouli
Danda B. Rawat
Siddharth Ray
Adeel Razi
Mark C. Reed
Kiran M. Rege
Sy Reich
Lars Reichardt
Günter Reise
Rene Rembarz
Tian Peng Ren
Olivier Renaudin
Eric Renault
Markku Renfors
Tobias Renk
Daryl Reynolds
Abdelmounaam Rezgui
Seung Hyong Rhee
Injong Rhee
Mathias Riback
Carlos Ribeiro
Anna Riccioni
Fred Richter
Joel Ridroges
Ines Riedel
Max Riegel
Taneli Riihonen
Jürgen Rinas
Raffaele Riva
Pablo Rivas
Jörg Robert
Vincent Roca
Antonio Rodrigues
Joel Rodrigues
Florian Roemer
Sandra Roger
Beiyu Rong
Francesco Rossetto
Michele Rossi
Pierluigi Salvo Rossi
Tommaso Rossi
Peter Rothenpieler
Jean-Louis Rougier
Fabian Rozario
Steven Ruan
Michael Ruder
Luca Rugini
Pedro M. Ruiz
Imran Rustam
Kalle Ruttik
Didier Le Ruyet
Kwanwoong Ryu
Hyun Seok Ryu
Jong Yeol Ryu
Mohamed Saad
Walid Saad
Ahmed Saadani
Safa Saadaoui
Harri Saarnisaari
Joachim Sachs
Brian M. Sadler
Rashid Saeed
Hamid Saeedi

Plenaries

Will Wireless Communications Be A Monster or An Angel?
William C. Y. Lee, Former VP and Chief Scientist of Vodafone PLC, Honorary Dean of School of Advanced Communication, Peking University, China

Professor William C.Y. Lee served as Honorary Dean of School of Advanced Communications, Peking University, China. He was Chairman of LinkAir Communications, Inc. from 2000-2005. He was Vice President and Chief Scientist of Pactel, then AirTouch, then Vodafone-AirTouch, then Vodafone from 1985-2000.

Dr. Lee was one of the pioneers in developing advanced wireless technology ― AMPS ― at Bell Labs (1964-1979). His UHF mobile radio propagation model is known as the Lee Model. While he worked at Pactel, he was elected as co-chair of ARTS Committee of CTIA in selecting the second-generation (2G) cellular system for USA (1987-1988). He advocated CDMA technology. He funded, technical assisted and provided the spectrum for Qualcomm to develop it in 1989. Under his leadership, the first CDMA phone call was completed in Los Angeles in 1995.

Dr. Lee is the inventor of Microcell, his patented Microcell System was deployed in Los Angeles and San Diego in 1990. Dr. Lee has published more than 300 articles and eight technical books on mobile communications. He holds 30 U.S. patents, with 2 in pending. He received many prestigious industry awards including CDMA Industry Achievement Award and IEEE The third Millennium Medal Award.

Next Challenges in Optimizing the Wireless Physical Layer
Gerhard Fettweis, Technische Universität Dresden, Germany

Shannon has layed the foundation for a fantastic research race in optimizing the physical layer over the last 50 years. Major advances have been made, leaving little room for improvement for achieving the capacity of links. However, new challenges are facing us today, which require us to review the optimization strategy which our community has been following.

For this reason, an overview of new challenges will be given which we are facing today. This shows that a parallel set of new research trades are to be carried out, with many open questions to be answered over the coming years.

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

Beyond the Generations Game... Co-located versus Distributed MIMOs?
Lajos Hanzo, Professor, University of Southampton, UK

In the presence of shadow-fading the now classic co-located MIMO elements are incapable of providing multiple independently faded replicas of the transmitted signal, which erodes their predicted capacity gains. This capacity-limitation may be circumvented by employing relaying, distributed space-time coding or other cooperation-aided distributed MIMO techniques, which is the subject of this lecture. As an intuitively appealing concept, one may view the benefits of decode-and-forward based relaying as receiving and then flawlessly regenerating as well as re-transmitting the original transmitted signal from a relay ― provided of course that the relay succeeded in error-freely detecting the original transmitted signal ― but did it?

On a realistic note ― the predicted system capacity gains are only valid under the idealized conditions of perfect channel estimation andperfect synchronization...

Professor Lajos Hanzo FREng, FIEEE, FIET, DSc received his degree in electronics in 1976 and his doctorate in 1983. During his 34-year career in telecommunications he has held various research and academic posts in Hungary, Germany and the UK. Since 1986 he has been with the School of Electronics and Computer Science, University of Southampton, UK, where he holds the chair in telecommunications. He has co-authored 19 John Wiley - IEEE Press books on mobile radio communications totalling in excess of 10 000 pages, published 684 research papers at IEEE Xplore, acted as TPC Chair of IEEE conferences, presented keynote lectures and been awarded a number of distinctions. Currently he is directing an academic research team, working on a range of research projects in the field of wireless multimedia communications sponsored by industry, the Engineering and Physical Sciences Research Council (EPSRC) UK, the European IST Programme and the Mobile Virtual Centre of Excellence (VCE), UK. He is an enthusiastic supporter of industrial and academic liaison and he offers a range of industrial courses. He is also an IEEE Distinguished Lecturer as well as a Governor of both the IEEE ComSoc and the VTS. He is the acting Editor-in-Chief of the IEEE Press. For further information on research in progress and associated publications please refer to http://www-mobile.ecs.soton.ac.uk

Tuesday 18 May 2010 9.45 – 10.30 The Grand Ballroom
Enhanced Video Phone Services for NGN/IMS
Yi-Bing Lin, Professor, National Chiao Tung University, Taiwan

A Next Generation Network (NGN) has been developed in Taiwan, where IP Multimedia Subsystem (IMS) plays an important role to offer IP-based multimedia services. Such NGN/IMS networks have also been deployed worldwide. However, details of commercial-grade NGN service implementations are seldom reported in public. In this paper, we show how existing video phone service can be enhanced through Chunghwa Telecom's NGN/IMS. Specifically, we illustrate three examples including Multimedia on Demand (MOD) TV, Multimedia Ringback Tone (MRBT) and Easy Go (EzGo). We also measure the delay times for accessing these services. The measurements indicate that performance for these IMS-based services is satisfactory.

Professor Yi-Bing Lin is Dean and Chair Professor of College of Computer Science, National Chiao Tung University (NCTU), Taiwan. He is a senior technical editor of IEEE Network. He serves on the editorial board of IEEE Transactions on Vehicular Technology. He is General and Program Chairs for prestigious conferences including ACM MobiCom 2002. He is Guest Editor for several journals including IEEE Transactions on Computers and IEEE JSAC. Lin is the authors of three books Wireless and Mobile Network Architecture (Wiley, 2001), Wireless and Mobile All-IP Networks (John Wiley,2005), and Charging for Mobile All-IP Telecommunications (Wiley, 2008). Lin received numerous research awards including IBM Faculty Award, 2005 NSC Distinguished Researcher and 2006 Academic Award of Ministry of Education. Lin is an IEEE Fellow, ACM Fellow, an AAAS Fellow, and an IET Fellow.

Panels

Wednesday, 19 May 2010, 9.00 – 10.30 The Auditorium (10F)
A Light-Hearted Panel Discussion on 'Green Radio'

Chair:	**Lajos Hanzo**	*University of Southampton, UK*
Panelists:	**Ian F. Akyildiz**	*Georgia Institute of Technology, USA*
	Kwang-Cheng Chen	*National Taiwan University, Taiwan*
	Gerhard Fettweis	*Technische Universität Dresden, Germany*
	Gerd Ascheid	*RWTH Aachen University, Germany*

Motivated by our global concern over climate change and environmental issues, each branch of industry, including the wireless communications industry is dedicated to reducing their environmental impact. Hence both the industrial and academic community embarked on developing power-efficient 'green' radio systems. This is a challenging issue, especially in the light of the ever-increasing throughput requirements, when we consider that since the 9.6 Kbit/sec GSM data channel's development we gradually progressed to rates in excess of 13 Mbit/s, which may be delivered by the HSPA system and the even higher rates are promised by the emerging LTE-Advanced system. This corresponds to a rate increase in excess of three orders of magnitude. At the same time – despite the substantial advances in transceiver design the required bit-energy has not been reduced by a similar factor. There are nonetheless interesting further avenues to pursue and this panel session will seek to provoke debate on what constitutes an efficient green radio system, hypothesizing that any transceiver, which increases the throughput linearly with the transmit power may be deemed a 'green' solution.

Professor Lajos Hanzo : For bio, see Page 13.

Professor Ian F. Akyildiz received his BS, MS, and PhD degrees in Computer Engineering from the University of Erlangen-Nuremberg, Germany, in 1978, 1981 and 1984, respectively. Currently, he is the Ken Byers Distinguished Chair Professor with the School of Electrical and Computer Engineering, Georgia Institute of Technology, Director of Broadband Wireless Networking Laboratory and Chair of the Telecommunication Group at Georgia Tech. Dr. Akyildiz is also an Honorary Professor with the School of Electrical Engineering at the Universitat Politècnica de Catalunya, Barcelona, Spain, since June 2008. Also since March 2009, he is an Honorary Professor with the Department of Electrical, Electronic and Computer Engineering at the University of Pretoria, South Africa. He is a Visiting Professor with King Saud University, Riyadh, Saudi Arabia, starting January 2010. He is the Editor-in-Chief of Computer Networks (Elsevier) Journal, the founding Editor-in-Chief of the Ad Hoc Networks Journal (Elsevier) in 2003, the founding Editor-in-Chief of the Physical Communication (PHYCOM) Journal (Elsevier) in 2008, and the founding Editor-in-Chief of Nano Communication Networks (NANO-COMNET) Journal (Elsevier) in 2010. Dr. Akyildiz serves on the advisory boards of several research centers, journals, conferences and publication companies. Dr. Akyildiz is an IEEE Fellow (1996) and an ACM Fellow (1997). He received numerous awards from IEEE and ACM. His current research interests are in Nanonetworks, Cognitive Radio Networks, and Wireless Sensor Networks.

Professor Kwang-Cheng Chen received B.S. from the National Taiwan University in 1983, M.S. and Ph.D from the University of Maryland, College Park, United States, in 1987 and 1989, all in electrical engineering. From 1987 to 1998, Dr. Chen worked with SSE, COMSAT, IBM Thomas J. Watson Research Center, and National Tsing Hua University, in mobile communications and networks. Since 1998, Dr. Chen has been with National Taiwan University, Taipei, Taiwan, ROC, and is the Distinguished Professor and Director for the Graduate Institute of Communication Engineering, and Director for the Communication Research Center, National Taiwan University. Dr. Chen actively involves the technical organization of numerous leading IEEE conferences, including as the Technical Program Committee Chair of 1996 IEEE International Symposium on Personal Indoor Mobile Radio Communications, TPC co-chair for IEEE Globecom 2002, General Co-Chair for 2007 IEEE Mobile WiMAX Symposium in Orlando, 2009 IEEE Mobile WiMAX Symposium in Napa Valley, IEEE 2010 Spring Vehicular Technology Conference, and IEEE 2010 Workshop on Social Networks. He has served editorship with a few IEEE journals and many international journals including, and served various positions in IEEE. Dr. Chen also actively participate various wireless international standards. He has authored and co-authored over 200 technical papers and 18 granted US patents. He co-edits (with R. DeMarca) the book Mobile WiMAX published by Wiley 2008, and authors a book Principles of Communications published by River 2009, and co-author (with R.Prasad) another book Cognitive Radio Networks published by Wiley 2009. Dr. Chen is an IEEE Fellow and received numerous awards and honors. Dr. Chen's research interests include wireless communications and networks, future computation/communication, and cognitive science.

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

Professor Gerd Ascheid, SM-IEEE, received the Dipl.-Ing. (1977) and Dr.-Ing. (1984) degrees in EE (Communications Eng.) from RWTH Aachen University. In 1988 he started as a co-founder CADIS GmbH which successfully brought the system simulation tool COSSAP to the market. In 1994 CADIS GmbH was acquired by SYNOPSYS, a California-based EDA market leader, where his last position was Senior Director (Executive Management), Wireless & Broadband Communications Service Line. Design projects at Synopsys ranged from spacecraft transponders to UMTS physical layer. Since April 2003 Gerd Ascheid holds the chair for Integrated Signal Processing of RWTH Aachen University (www.iss.rwth-aachen.de). He is also coordinator of the research cluster on Ultra-high speed Mobile Information and Communication (UMIC Research Centre, www.umic.rwth-aachen.de) at RWTH Aachen University. His main research interest is in physical layer algorithms and energy efficient MPSoC for wireless communication.

Wednesday, 19 May 2010, 11.00 – 12.30 The Auditorium (10F)
MIMO vs. CO-OPERATION

Chair:	**Ian F. Akyildiz**	*Georgia Institute of Technology, USA*
Panelists:	**Fumiyuki Adachi**	*Tohoku University, Japan*
	Lin-Nan Lee	*Hughes, USA*
	Halim Yanikomeroglu	*Carleton University, Canada*

At the time of writing the design of MIMO systems has reached a state of maturity and they have also found their way into numerous standardized systems. Their benefit is that they are capable of increasing the achievable system capacity by a factor, which is proportional to the number of transmit antennas, provided that the number of receive antennas is identical to that of the transmit antennas. The employment of multiple antennas for downlink transmissions from the BS is indeed feasible, but the handheld terminals have limited dimensions and hence it is challenging to accommodate multiple antenna elements for downlink reception or for uplink transmissions. Fortunately the recent advances in cooperative communications facilitate the creation of Virtual Antenna Arrays from the single-antenna

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aided mobile stations. Naturally, there are numerous related design-challenges, which will be discussed in this panel session.

Professor Ian F. Akyildiz : For bio, see Page 13.

Professor Fumiyuki Adachi received the B.S. and Dr. Eng. degrees in electrical engineering from Tohoku University, Sendai, Japan, in 1973 and 1984, respectively. In April 1973, he joined the Electrical Communications Laboratories of Nippon Telegraph & Telephone Corporation (now NTT) and conducted various types of research related to digital cellular mobile communications. From October 1984 to September 1985, he was a United Kingdom SERC Visiting Research Fellow in the Department of Electrical Engineering and Electronics at Liverpool University. From July 1992 to December 1999, he was with NTT Mobile Communications Network, Inc. (now NTT DoCoMo, Inc.), where he led a research group on wideband CDMA (W-CDMA) for 3G cellular systems (IMT-2000). Since January 2000, he has been with Tohoku University, Sendai, Japan, where he is a Professor of Electrical and Communication Engineering at the Graduate School of Engineering. His research interests are in broadband wireless access techniques including equalization, MIMO diversity/multiplexing, distributed antenna network. He is an IEEE Fellow and was a co-recipient of the IEEE Vehicular Technology Transactions Best Paper of the Year Award 1980 and again 1990 and also a recipient of Avant Garde award 2000. He is a Fellow of Institute of Electronics, Information and Communication Engineers of Japan (IEICE) and was a recipient of IEICE Achievement Award 2002 and a co-recipient of the IEICE Transactions Best Paper of the Year Award 1996 and again 1998. He was a recipient of Thomson Scientific Research Front Award 2004 and Ericsson Telecommunications Award 2008.

Dr. Lin-Nan Lee heads the Advance Development Group which performs research and development in source coding, channel coding, modulation, multiple access and networking technologies at Hughes. He and his group have made many significant contributions to the design and engineering of Hughes satellite and wireless communications products and technology. Among the most notable are, high-quality voice coding at low data rates, turbo codes, interference cancellation, low-cost electronic scanning antenna for Very Small Aperture Terminals (VSAT) and algorithms for Ground Based Beam Forming (GBBF). The group actively participated in the third generation wireless communications standards process in both U.S. and Europe, and has been successful in introducing the turbo codes, channel access protocols and several other key technologies into the 3GPP and 3GPP2 standards. Subsequently, the group also introduced low-density parity check (LDPC) codes into the next generation Digital Video Broadcast (DVB) as the next generation satellite broadcast standard (DVB-S2), and contributed in IEEE802.11.n Standards under his leadership.

Lin-Nan Lee received his B.S. degree from National Taiwan University, his M.S. and Ph.D. from the University of Norte Dame, all in Electrical Engineering, in 1970, 1972, and 1976, respectively. His Ph.D. dissertation on concatenated codes with feedback formed the basis for turbo codes, in which a great deal of interest has been gathered in recent years. During 1975-1977, he was with the Linkabit Corporation. There, he co-developed the Priority Oriented Demand Assignment (PODA), packet-based satellite multiple access protocol as a first attempt to address the quality of service (QoS) issues of packet-switched networks such an the present-day Internet.

During 1978-1992, he worked for Communications Satellite Corporation (COMSAT), serving in various research and development positions in the COMSAT Laboratory, and as Chief Scientist of COMSAT System Division. His major research areas at COMSAT spanned across conditional access, channel coding, digital signal processing, and high-definition television. In recognition of his accomplishments, he has been awarded the COMSAT Exceptional Invention Award, the 1985 COMSAT Research Award, and the 1988 COMSAT Research Award.

Dr. Lee is a Fellow of IEEE. He has authored or co-authored over 30 US patents, more than two dozen journal and conference papers, and chapters of two books.

Dr. Halim Yanikomeroglu is an Associate Professor at Department of Systems and Computer Engineering at Carleton University, Ottawa. Dr. Yanikomeroglu's research interests cover many aspects of the physical, medium access, and networking layers of wireless communications with a special emphasis on multihop/relay/mesh networks and cooperative communications. Dr. Yanikomeroglu has co-authored around 100 papers in these research areas in the last 5 years and also has given several tutorials in leading international conferences.

Registration

Registration will take place in the International Reception Hall foyer. Opening times are:
- Sunday 16 May   0800 – 1730 *
- Monday 17 May   0730 – 1730

- Tuesday 18 May   0800 – 1730
- Wednesday 19 May   0800 – 1730

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

Breaks and Social Events

Coffee breaks will take place in the exhibit and poster area in the International Reception Hall. Lunches, which are included in the full registration, will be served in the Ji-Shiang Room on Monday and Wednesday, and The Grand Ballroom on Tuesday. You will need the ticket included in your registration packet to gain entry.

The reception on the Sunday evening will be held in The Sky Lounge, and the Banquet on Tuesday evening in the Grand Ballroom. Entrance to both the reception and the banquet is also by ticket only, so please remember to bring your tickets.

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Technical Sessions

Monday 17 May 2010

Monday 17 May 2010 11:00-12:30 R101

1A: Relay Transmission

Chair: Ai-Chun Pang, National Taiwan University

1 **Power-Efficient Opportunistic Amplify-and-Forward Single-Relay Aided Multi-User SC-FDMA Uplink**
Jiayi Zhang, Lie-Liang Yang, Lajos Hanzo, University of Southampton

2 **Relay Selection Scheme for Orthogonal Amplify-And-Forward Relay-Enhanced Cellular System in a Multi-Cell Environment**
Hyun S. Ryu, Jun S. Lee, Chung G. Kang, Korea University

3 **Distributed Network Channel Coding for Multiple Access Relay Interference Channels**
Zihuai Lin, Yonghui Li, Branka Vucetic, University of Sydney

4 **Double-Differential Encoding for Dual-Hop Amplify-and-Forward Relaying in IR-UWB Systems**
Maziyar Hamdi, Jan Mietzner, Robert Schober, University of British Columbia

5 **Multiuser Cooperative Relay Communication Employing Hierarchical Modulation**
Roderick Jaehoon Whang, Huaping Liu, Oregon State University; Een-Kee Hong, Kyung Hee University

Monday 17 May 2010 11:00-12:30 R102

1B: Spectrum Sensing for Cognitive Radio I

Chair: Husheng Li, University of Tennessee

1 **Cooperative Spectrum Sensing in Cognitive Radio Networks with Weighted Decision Fusion Scheme**
Edward C. Y. Peh, Nanyang Technological University; Ying-Chang Liang, Institute for Infocomm Research; Yong Liang Guan, Nanyang Technological University; Yonghong Zeng, Institute for Infocomm Research

2 **Decentralized Cooperative Spectrum Sensing for Ad-Hoc Disaster Relief Network Clusters**
Nuno Pratas, Nicola Marchetti, Neeli Rashmi Prasad, CTiF, Aalborg University; António Rodrigues, IT/IST, Technical University of Lisbon; Ramjee Prasad, CTiF, Aalborg University

3 **Performance Evaluation of Overhead Reduction Method for Cyclostationarity-Inducing Transmission**
Hiroki Harada, Koji Maeda, Tatsuo Furuno, Shunji Miura, Tomoyuki Ohya, NTT DOCOMO, Inc.

4 **Cooperative Spectrum Sensing in Cognitive Radio under Noise Uncertainty**
Haijun Wang, Yi Xu, Xin Su, Jing Wang, Tsinghua University

5 **Collaborative Spectrum Sensing in Cognitive Radio Vehicular Ad Hoc Networks: Belief Propagation on Highway**
Husheng Li, David K. Irick, The University of Tennessee

Monday 17 May 2010 11:00-12:30 R103

1C: Signal Detection

Chair: Tsung-Hsien Liu, National Chung Cheng University

1 **Markov Chain Monte Carlo MIMO Detection for Systems with Imperfect Channel State Information**
Martin Senst, Gerd Ascheid, RWTH Aachen University

2 **A Novel OFDM MIMO-Multiplexing Architecture with QRM-MLD Detection and LDPC Decoding**
Yuanliang Huang, Hong Kong Applied Science and Technology Research Institute; Huiling Zhu, University of Kent

3 **Flexible Complexity Fast Decoding of Multiplexed Alamouti Codes in Space-Time-Polarization Systems**
Linda M. Davis, Sudharshan Srinivasan, University of South Australia; Songsri Sirianunpiboon, Defence Science & Technology Organization

4 **A Low-Complexity Integration-Based MAP SISO Detector for Channel Coded MIMO-OFDM Systems**
Huan-Chun Wang, De-Jhen Huang, National Taiwan University of Science and Technology

5 **Iterative Soft-In Soft-Out Sphere Detection for 3GPP LTE**
Mohammad Ali Shah, Björn Mennenga, Gerhard Fettweis, Technische Universität Dresden

1E: OFDM/OFDMA Technologies I

Chair: Xianbin Wang, University of Western Ontario

1 Effects of Side Information on Complexity Reduction in Superimposed Pilot Channel Estimation in OFDM Systems
Sahar Javaher Haghighi, Serguei Primak, Xianbin Wang, The University of Western Ontario

2 Optimal Distributed Subchannel, Rate and Power Allocation Algorithm in OFDM-Based Two-Tier Femtocell Networks
Jianmin Zhang, Zhaoyang Zhang, Kedi Wu, Aiping Huang, Zhejiang University

3 Resource Efficient Opportunistic Multicast Scheduling for IPTV over Mobile WiMAX
Shiang-Ming Huang, National Chiao Tung University; Chih-Wei Huang, Po-Han Wu, Jenq-Neng Hwang, Victor Gau, University of Washington; Yaw-Chung Chen, National Chiao Tung University

4 An Energy-Efficient Cooperative SFBC-OFDM System Using Subcarrier Permutation
Chin-Liang Wang, Po-Chung Shen, Natioinal Tsing Hua University

5 Distributed Q-Learning for Interference Control in OFDMA-Based Femtocell Networks
Ana Galindo-Serrano, Lorenza Giupponi, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)

1F: Interference Issues in Wireless Networks

Chair: Youngnam Han, Korea Advanced Institute of Science and Technology

1 Multi-Cell Interference Aware Resource Allocation for Half-Duplex Relay Based Cooperation
Cédric Abgrall, Emilio Calvanese Strinati, CEA, LETI, MINATEC; Jean-Claude Belfiore, TELECOM ParisTech

2 Inter-Frequency Re-Selection for CSG Cell Interference Avoidance in LTE Network
Janne Kurjenniemi, Olli Alanen, Magister Solutions; Tero Henttonen, Jorma Kaikkonen, Nokia

3 Adaptive Frequency Reuse Scheme for Interference Reduction in Two-Hop Relay Networks
Jin-Yup Hwang, Korea Advanced Institute of Science and Technology; Yoona Oh, Central R&D Laboratory KT Corporation; Youngnam Han, Korea Advanced Institute of Science and Technology

4 Evaluating Adjacent Channel Interference in IEEE 802.11 Networks
Wee Lum Tan, Konstanty Bialkowski, National ICT Australia; Marius Portmann, The University of Queensland

5 A Cumulant-Based Characterization of the Aggregate Interference Power in Wireless Networks
Muhammad Aljuaid, Halim Yanikomeroglu, Carleton University

1G: Localization and Tracking

Chair: Ruben M. Lorenzo, University of Valladolid

1 Using a Sensor Network to Localize a Source under Spatially Correlated Shadowing
John T. Flåm, Ghassan M. Kraidy, Daniel J. Ryan, Norwegian University of Science and Technology

2 E-Field Assessment Errors Caused by the Human Body on Localization Systems
A. Bahillo, J. Prieto, University of Valladolid; S. Mazuelas, CEDETEL (Center for the Development of Telecommunications); R. M. Lorenzo, P. Fernández, E. J. Abril, University of Valladolid

3 The Dedicated Short-Range Vehicle Tracking
Po-Wen Lu, Chunghwa Telecom Co., Ltd.; Rongshun Chen, National Tsing Hua University

4 Traffic Contracts Based Optimizations for QoS Support in DVB-RCS Satellite Systems
Fabrice Hobaya, TeSA; Cédric Baudoin, Thales Alenia Space; Emmanuel Chaput, IRIT - ENSEEIHT; Patrick Gélard, Emmanuel Dubois, CNES; André-Luc Beylot, IRIT - ENSEEIHT

5 Attenuation Measurements and Interference Issues for In-Cabin Wireless Networks
Nektarios Moraitis, Philip Constantinou, National Technical University of Athens

1H: MIMO Channels

Chair: Robert Caiming Qiu, Tennessee Technological University

1 Higher Order MIMO Outdoor-to-Indoor Measurements Using Repeaters
Mikael Coldrey, Patrik Persson, Ericsson Research; Tommy Hult, Lund University; Andreas Wolfgang, Chalmers University of Technology

2 Multi-Polarized Channel Statistics for Outdoor-to-Indoor and Indoor-to-Indoor Channels
Ali Panahandeh, François Quitin, Jean M. Dricot, François Horlin, Université Libre de Bruxelles (ULB); Claude Oestges, Université catholique de Louvain (UCL); Philippe De Doncker, Université Libre de Bruxelles (ULB)

3 Interference Limited MIMO Measurements
S. Jaeckel, L. Thiele, V. Jungnickel, Heinrich Hertz Institute

4 A Dual-Link Capacity Analysis of Measured Time-Variant Radio Indoor Channels
V.-M. Kolmonen, K. Haneda, J. Poutanen, Aalto University; F. Tufvesson, Lund University; P. Vainikainen, Aalto University

5 MIMO System Performance Evaluation of a 4-port Antenna in Indoor Environment at 2.6GHz
Ming Lee, Yu-Chun Lu, Li-Han Tu, Yi-Cheng Lin, National Taiwan University; Shun-Chang Lo, Gene C. H. Chuang, Industrial Technology Research Institute; Ding-Bing Lin, National Taipei University of Technology; Hsueh-Jyh Li, National Taiwan University

1I: Performance Analysis of Cooperative Relay Systems

Chair: Che Lin, National Tsing Hua University

1 Outage Probability of OFDM-Based Relay Networks with Relay Selection
Jae Cheol Park, Tan Tai Do, Yun Hee Kim, Kyung Hee University

2 Sum of Ratios of Complex Gaussian RVs and Its Application to a Simple OFDM Relay Network
Juan J. Sánchez-Sánchez, Unai Fernández-Plazaola, M. C. Aguayo-Torres, Universidad de Málaga

3 Outage Probability of Selection Cooperation with Channel Estimation Errors
Mehdi Seyfi, Sami Muhaidat, Jie Liang, Simon Fraser University

4 Outage Performance of Dual-Hop Relay Network with Co-Channel Interference
Shaohua Chen, Xin Zhang, Fang Liu, Dacheng Yang, Beijing University of Post and Telecommunications

5 SER of Multiple Fixed Gain Amplify-and-Forward Relays with Receive Diversity
Maged Elkashlan, CSIRO ICT Centre; Phee Lep Yeoh, Raymond H. Y. Louie, University of Sydney; Iain B. Collings, CSIRO ICT Centre

1Pa: Cognitive Radio and Cooperative Communications I

1 Cooperative Hybrid ARQ in Wireless Decode-and-Forward Relay Networks
Wei Ni, Zhuo Chen, Iain B. Collings, CSIRO ICT Centre

2 Generalized Joint Channel Coding and Physical Network Coding for Two-Way Relay Systems
Yidong Lang, Dirk Wübben, University of Bremen

3 Distributed Relay Selection Scheme in Decode-and-Forward Cooperative Systems
Yinsheng Li, Q. T. Zhang, City University of Hong Kong

4 Two-Slot Channel Estimation for Analog Network Coding Based on OFDM in a Frequency-Selective Fading Channel
Tomas Sjödin, Umea University; Haris Gacanin, Fumiyuki Adachi, Tohoku University

5 Cooperative Diversity with Fast HARQ for Delay-Sensitive Flows
Yao-Liang Chung, Zsehong Tsai, Graduate Institute of Communication Engineering, National Taiwan University

6 Channel Estimation Based on Pilot Frequency Division Multiplexing for Distributed Space-Frequency Coded Cooperative Communication System
Xiaofan Yu, Chunming Zhao, Chun Pan, Southeast University

7 To Cooperate or Not: A Capacity Perspective
Li Wang, Lingkun Kong, Soon Xin Ng, Lajos Hanzo, University of Southampton

8 Double Threshold Digital Relaying for Cooperative Wireless Networks
Kuang-Hao Liu, National Cheng Kung University

9 Phase Forward Cooperative Communications with Antenna Selection and Continuous Phase Modulation
Qi Yang, Paul Ho, Simon Fraser University

Monday 17 May 2010 11:00-12:30 International Ballroom
1Pb: Multiple Antenna Systems and Space-Time Processing I

1 Improved Sum Power Iterative Water-Filling with Rapid Convergence and Robustness for Multi-Antenna Gaussian Broadcast Channels
Peter He, Lian Zhao, Ryerson University

2 A Novel Subcarrier Mapping Scheme for EUTRA Downlink Transmit Diversity
Anxin Li, Yuan Yan, Xinying Gao, Hidetoshi Kayama, DOCOMO Beijing Communications Laboratories Co., Ltd

3 Adaptive Control of Surviving Branches for Fixed-Complexity Sphere Decoder
Sheng Lei, Cong Xiong, Xin Zhang, Dacheng Yang, Beijing University of Posts and Telecommunications

4 Lattice Reduction Aided Detection for Underdetermined MIMO Systems: A Pre-Voting Cancellation Approach
Lin Bai, Swansea University; Chen Chen, Peking University; Jinho Choi, Swansea University

5 Novel MMSE Precoder and Decoder Designs for Single-User MIMO Systems under General Power Constraints
Jialing Li, I-Tai Lu, Enoch Lu, Polytechnic Institute of New York University

6 Group-Decodable Diversity Embedded Space-Time Codes
Tian Peng Ren, National University of Defense Technology; Yong Liang Guan, Nanyang Technological University; Chau Yuen, Institute for Information Research; Er Yang Zhang, National University of Defense Technology

7 Using Direct Analog Feedback for Multiuser MIMO Broadcast Channel
Phoenix Yuan, Paul Ho, Simon Fraser University

Monday 17 May 2010 11:00-12:30 International Ballroom
1Pc: Transmission Technologies I

1 Multiple-Candidate Separation for PTS-Based OFDM Systems by Turbo Decoding
Yung-Chih Tsai, National Taiwan University; Yeong-Luh Ueng, National Tsing Hua University

2 Low-Complexity Iterative Carrier Frequency Offset Estimation with ICI Elimination for OFDM Systems
Yuh-Ren Tsai, Tsung-Wei Wu, National Tsing Hua University

3 OFDM Signal Detection in Doubly Selective Channels with Whitening of Residual Intercarrier Interference and Noise
Hai-wei Wang, David W. Lin, Tzu-Hsien Sang, National Chiao Tung University

4 Performance Analysis of Sign-Based Pre-FFT Synchronization in OFDM Systems
Leif Wilhelmsson, Ericsson Research; Isael Diaz, Lund University; Thomas Olsson, Ericsson Research; Viktor Öwall, Lund University

5 Iterative Receiver Employing Multiuser Detection and Channel Estimation for MIMO-OFDM IDMA
Jun Shikida, Satoshi Suyama, Hiroshi Suzuki, Kazuhiko Fukawa, Tokyo Institute of Technology

6 A Differential Cross-Correlation Cell Search Algorithm for IEEE 802.16e OFDMA Systems
Juinn-Horng Deng, Shun-Hsiung Chang, Jeng-Kuang Hwang, Shu-Min Liao, Yuan Ze University

7 Suboptimum Channel Estimate for MIMO-OFDM System in Time-Varying Fast Fading Channels
Jeich Mar, Chi-Cheng Kuo, Chin-Chung Ko, Yuan Ze University

8 A Data Detection Scheme for Single-Carrier Block Transmission Using Sphere Decoding Algorithm
Ying-Tsung Lin, Chia-Hsun Kuo, Sau-Gee Chen, Wai-Chi Fang, National Chiao-Tung University

9 Joint Channel, Carrier-Frequency-Offset and Noise-Variance Estimation for OFDM Systems Based on Expectation Maximization
Jiankang Zhang, Zhengzhou University, University of Southampton; Xiaomin Mu, Zhengzhou University; Lajos Hanzo, University of Southampton

10 A Time Domain Iteration-Based Channel Estimation Method in OFDM Systems with Null Subcarriers
Wanlu Sun, Beijing University of Posts and Telecommunications; Lihua Li, Wireless Technology Innovation Institute

Monday 17 May 2010 14:00-15:30 R101
2A: UWB
Chair: Mamoru Sawahashi, Tokyo City University

1 New TOA Estimators within Energy-Based Receivers under Realistic UWB Channel Statistics
J. Youssef, B. Denis, C. Godin, S. Lesecq, CEA-Leti / Minatec

2 Narrowband Interference Impact on the Performance of UWB Communication Systems in Lognormal Flat Fading Channels
Ehab M. Shaheen, Mohamed El-Tanany, Carleton University

3 Adaptive Detector for SC-FDE in Multiuser DS-UWB Systems Based on Structured Channel Estimation with Conjugate Gradient Algorithm
Sheng Li, Rodrigo C. de Lamare, University of York

4 Power Spectral Analysis of Orthogonal Pulse-Based TH-UWB Signals
Sudhan Majhi, INSA de Rennes; A. S. Madhukumar, Nanyang Technological University; Youssef Nasser, Jean François Hélard, INSA de Rennes

5 Low-Complexity Receivers for Multi-Carrier Pulse Position Modulation
Huilin Xu, Liuqing Yang, University of Florida; Chia-Chin Chong, DOCOMO USA Labs

2B: Spectrum Sensing for Cognitive Radio II
Chair: Husheng Li, University of Tennessee

1 Cooperative Correlation Based Spectrum Sensing for DMB-T Systems
Jiajun Li, Zhenhui Tan, Shaoyi Xu, Haibo Wang, Beijing Jiaotong University

2 Optimization of Linear Collaborative Spectrum Sensing with Genetic Algorithms
Michele Sanna, Maurizio Murroni, DIEE, University of Cagliari

3 Defending Against Hit-and-Run Attackers in Collaborative Spectrum Sensing of Cognitive Radio Networks: A Point System
Evan Noon, Farragut High School; Husheng Li, The University of Tennessee

4 Sensitivity of Spectrum Sensing Techniques to RF Impairments
Jonathan Verlant-Chenet, Julien Renard, Jean-Michel Dricot, Philippe De Doncker, François Horlin, Université Libre de Bruxelles

5 Cooperative Spectrum Sensing with Wavelet Denoising in Cognitive Radio
Haijun Wang, Yi Xu, Xin Su, Jing Wang, Tsinghua University

Monday 17 May 2010 14:00-15:30 R103
2C: Precoding
Chair: Thomas Edlich, University of Kassel

1 Recursive Spatial Multiplexing: Improving Unitary Precoding with Outdated Channel State Information
Thomas Edlich, Thomas Hunziker, Dirk Dahlhaus, University of Kassel

2 Statistical Precoder Design for Spatial Multiplexing Systems in Correlated MIMO Fading Channels
Sung-Hyun Moon, Jin-Sung Kim, Inkyu Lee, Korea University

3 A Bit Allocation Scheme for MIMO Equal Gain Precoders
Chi-Liang Chao, Chunghwa Telecom Laboratories; Shang-Ho Tsai, Terng-Yin Hsu, National Chiao Tung University

4 Improved Iterative Water-Filling with Rapid Convergence and Parallel Computation for Gaussian Multiple Access Channels
Peter He, Lian Zhao, Alagan Anpalagan, Ryerson University

5 SVD-Based vs. Release 8 Codebooks for Single User MIMO LTE-A Uplink
Gilberto Berardinelli, Troels B. Sørensen, Preben Mogensen, Aalborg University; Kari Pajukoski, Nokia-Siemens Networks

Monday 17 May 2010 14:00-15:30 R106
2E: OFDM/OFDMA Technologies II
Chair: Enoch Lu, Polytechnic Institute of New York University

1 QoS-Guaranteed Radio Resource Allocation with Distributed Inter-Cell Interference Coordination for Multi-Cell OFDMA Systems
Shuqin Zheng, Hui Tian, Zheng Hu, Lan Chen, Jianchi Zhu, Beijing University of Posts and Telecommunications

2 Recipient Maximization Multicast Scheme in IEEE 802.16j WiMAX Relay Networks
Wen-Hsing Kuo, Yuan Ze University; JengFarn Lee, Chung Cheng University

3 LDS-OFDM an Efficient Multiple Access Technique
Reza Hoshyar, Razieh Razavi, Mohammad Al-Imari, University of Surrey

4 Distributed Channel Selection Principles for Femtocells with Two-Tier Interference
Chiao Lee, National Chiao Tung University; Jane-Hwa Huang, National Chi Nan University; Li-Chun Wang, National Chiao Tung University

5 Soft Frequency Reuse in the Uplink of an OFDMA Network
Florian Wamser, David Mittelstädt, Dirk Staehle, University of Würzburg

Monday 17 May 2010 14:00-15:30 R107
2F: Handover in Wireless Networks
Chair: Abraham Fapojuwo, University of Calgary

1 A Novel Solution for Inter-Technology Handover
Shuqing Xing, Patrick Hosein, Young Hoon Kwon, Huawei Technologies Co., Ltd.

2 A Study of User-Profile Based Dynamic Channel Allocation in the Dual-Band Environment
Shun-Lung Cheng, Yao-Liang Chung, Zsehong Tsai, National Taiwan University

3 Comparative Performance Study for Integrated 3G/WLAN Networks Using Mobile IP, SIP, and m-SCTP Protocols
Ashraf Mahmoud, Abdul-Aziz Al-Helali, Marwan Abu-Amara, Talal Al-Kharobi, Tarek Sheltami, King Fahd University of Petroleum and Minerals

4 Access and Handover Management for Femtocell Systems
Zhong Fan, Yong Sun, Toshiba

5 A New Queueing Policy for Handoff Calls with Finite Queue Size in Wireless Cellular Networks
Lei Zheng, Ying Wang, Jun Yuan, Fang Liu, Beijing University of Posts and Telecommunications

Monday 17 May 2010 14:00-15:30 R108
2G: Security/Detection and Tracking
Chair: Chih-Wei Yi, National Chiao Tung University

1 Certificate Revocation to Cope with False Accusations in Mobile Ad Hoc Networks
Kyul Park, Hiroki Nishiyama, Tohoku University; Nirwan Ansari, New Jersy Inistitute of Technology; Nei Kato, Tohoku University

2 Large-Scale Phenomena Monitoring Scheme in Wireless Sensor Networks
Bomi Park, Soochang Park, Euisin Lee, Chungnam National University; Sungkee Noh, Electronics and Telecommunications Research Institute; Sang-Ha Kim, Chungnam National University

3 Optimization of Linear Wireless Sensor Networks for Serial Distributed Detection Applications
Gernot Fabeck, Rudolf Mathar, RWTH Aachen University

4 A Reduced-Complexity Decentralized Positioning and Tracking Algorithm for Wireless Sensor Networks
Dong-Shing Wu, Chin-Liang Wang, National Tsing Hua University

5 A Novel Image Authentication Approach Using an Overlap-Based Shared Secret for Collaborative Wireless Sensors
Tao Ma, Michael Hempel, Dongming Peng, Hamid Sharif, University of Nebraska Lincoln

Monday 17 May 2010 14:00-15:30 R109
2H: Evaluation Methods and Channel Simulators
Chair: Jenn-Hwan Tarng, National Chiao Tung University

1 Design and Simulation of Narrowband Indoor Radio Propagation Channels under LOS and NLOS Propagation Conditions
Yuanyuan Ma, Matthias Pätzold, University of Agder

2 3-D Geometry-Based Statistical Modeling of Cross-Polarization Discrimination in Wireless Communication Channels
Seok-Chul Kwon, Gordon L. Stüber, Georgia Institute of Technology

3 Extension of the dRET Model to Include Scattering from Tree Trunks in Microcell Urban Mobile Scenarios
R. F. S. Caldeirinha, T. R. Fernandes, N. Leonor, D. Ferreira, Instituto de Telecomunicações / Polytechnic Institute of Leiria

4 Simulating Mobile Channels for Directional Scenarios by the Inverse Discrete Fourier Transform
Jinyun Ren, Rodney G. Vaughan, Simon Fraser University

5 A Novel Sampling Method for the Spatial Frequencies of Sinusoid-Based Shadowing Models
Siegfried Klein, Bell Labs Germany; Serkan Uygungelen, Christian M. Mueller, Universität Stuttgart

Monday 17 May 2010 14:00-15:30 R110

2I: Cooperative Communications with MIMO Transceivers

Chair: Wen-Rong Wu, National Chiao Tung University

1 Linear MMSE Transceiver Design with Quality-of-Service Constraints in Amplify-and-Forward MIMO Relay Systems
Fan-Shuo Tseng, Guo-Luen Ke, Wen-Rong Wu, National Chiao-Tung University

2 Decode-and-Forward Based Cooperative Transmission Schemes for a Relay with Multiple Receive Antennas
Chang Kyung Sung, Iain B. Collings, CSIRO

3 Decentralized Base Station Processing for Multiuser MIMO Downlink CoMP
Winston W. L. Ho, Tony Q. S. Quek, Sumei Sun, Institute for Infocomm Research

4 Decentralized Reduced-Rank Multiuser Relaying for Cooperative Uplink CDMA Networks
Wan-Jen Huang, National Sun Yat-Sen University; Yung-Shun Wang, Y.-W. Peter Hong, Tsung-Hui Chang, National Tsing Hua University

5 Power Allocation for MIMO Systems with Multiple Non-Regenerative Single-Antenna Relays
Youngtaek Bae, Jungwoo Lee, Seoul National University

Monday 17 May 2010 14:00-15:30 International Ballroom

2Pa: Ad-Hoc and Sensor Networks I

1 Outage Analysis of Multi-Antenna DF Relay Systems with Finite Feedbacks over Nakagami-m Fading Channels
Zhen Liu, Xiaoxiang Wang, Hongtao Zhang, Zhenfeng Song, Beijing University of Posts and Telecommunications

2 A Complexity Adjustable Scheduling Algorithm for Throughput Maximization in Clusterized TDMA Networks
Arash T. Toyserkani, Mohammad R. Khanzadi, Erik G. Ström, Arne Svensson, Chalmers University of Technology

3 Iterative Cooperation DV-Hop Localization Algorithm in Wireless Sensor Networks
Shuai Xu, Xiaoxiang Wang, Yulong Wang, Jing Wang, Beijing University of Posts and Telecommunications

4 Asymptotic Connectivity of Large-Scale Wireless Networks with a Log-Normal Shadowing Model
Yujun Li, University of Electronic Science and Technology of China; Yaling Yang, Virginia Polytechnic Institute and State University

5 A Decentralized Collaborative Receive Beamforming Technique for Wireless Sensor Networks
Slim Zaidi, Keyvan Zarifi, Sofiene Affes, INRS-EMT; Ali Ghrayeb, Concordia University

6 Distributed Signal Estimation Using Binary Sensors with Multiple Thresholds
Babak Moussakhani, Ilangko Balasingham, Tor Ramstad, NTNU

7 Reducing the Calculation for Precise Localization in Wireless Sensor Networks
Alexander Born, Ralf Bill, University of Rostock

8 CAM: Congestion Avoidance and Mitigation in Wireless Sensor Networks
Mohammad Masumuzzaman Bhuiyan, Iqbal Gondal, Joarder Kamruzzaman, Monash University

9 An Energy Efficient Clustering Scheme for Mobile Ad Hoc Networks
Minming Ni, Zhangdui Zhong, Hao Wu, Beijing Jiaotong University; Dongmei Zhao, McMaster University

Monday 17 May 2010 14:00-15:30 International Ballroom

2Pb: Vehicular Electronics, Telematics, and Transportation

1 On the Impact of Human Driver Behavior on Intelligent Transportation Systems
Falko Dressler, Christoph Sommer, University of Erlangen

2 A Channel Access Scheme to Compromise Throughput and Fairness in IEEE 802.11p Multi-Rate/Multi-Channel Wireless Vehicular Networks
Shiann-Tsong Sheu, Yen-Chieh Cheng, Jung-Shyr Wu, National Central University

3 Location Tracking for WAVE Unicast Service
Chien-Chun Huang-Fu, Chi-Ling Chen, Yi-Bing Lin, National Chiao Tung University

4 Novel Channel Estimation Techniques in IEEE 802.11p Environments
Chi-Sheng Lin, Jia-Chin Lin, National Central University

5 Exponential Stabilization for Suspension System of Vehicle Application
Shen-Lung Tung, Chunghwa Telecom Co.. Ltd.; Yau-Tarng Juang, Wei-Ying Wu, National Central University

6 Real-Time Vision-Based Driver Drowsiness/Fatigue Detection System
K. P. Yao, W. H. Lin, C. Y. Fang, National Taiwan Normal University; J. M. Wang, National Taiwan University; S. L. Chang, St. John's University; S. W. Chen, National Taiwan Normal University

7 A Novel Detection Algorithm for Ultra Wide Band Short Range Radar in Automotive Applications
Purushothaman Surendran, Jeju National University; Seok Jun Ko, Sang-Dong Kim, Jong-Hun Lee, Daegu Gyeongbuk Institute of Science & Technology

8 Overview of Vehicle-to-Vehicle Radio Channel Measurements for Collision Avoidance Applications
Alexander Paier, Vienna University of Technology; Laura Bernadó, FTW; Johan Karedal, Lund University; Oliver Klemp, Delphi Delco Electronics Europe GmbH; Andreas Kwoczek, Volkswagen AG

Monday 17 May 2010 14:00-15:30 International Ballroom

2Pc: Wireless Access I

1 Improved Error Protection for Uplink Control Signaling in 3GPP-LTE via Complex-Field Coding
Tumula V. K. Chaitanya, Erik G. Larsson, Linkoping University; Niclas Wiberg, Ericsson Research

2 Adaptive Power Allocation Algorithm to Support Absolute Proportional Rates Constraint for Scalable OFDM Systems
Ashraf S. Mahmoud, Ali Y. Al-Rayyah, Tarek R. Sheltami, King Fahd University of Petroleum and Minerals

3 Pseudo Random Network Coding Design for IEEE 802.16m Enhanced Multicast and Broadcast Service
Cheng-Chih Chao, Ching-Chun Chou, Hung-Yu Wei, National Taiwan University

4 A Time Domain Inverse Matrix Receiver for CFO Suppression in WIMAX Uplink System
Xiupei Zhang, Heung-Gyoon Ryu, Chungbuk National University; Jason Gao, Shanghai University of Electrical Power

5 Generalized Frequency Reuse Schemes for OFDMA Networks: Optimization and Comparison
Lei Chen, Di Yuan, Linköping University

6 Low SNR Timing and Frequency Synchronization for PIP-OFDM System
Cong Wang, Xianbin Wang, The University of Western Ontario; Hai Lin, Osaka Prefecture University; Jean-Yves Chouinard, Laval University

7 An Efficient Downlink Bandwidth Allocation Scheme for Improving Subchannel Utilization in IEEE 802.16e WiMAX Networks
Hung-Chang Chen, Ching Kuo Institute of Management and Health; Kuei-Ping Shih, Tamkang University; Sheng-Shih Wang, Minghsin

University of Science and Technology; Chi-Tao Chiang, Tamkang University

8 A Novel Path Selection Mechanism for IEEE 802.16j Network
Hongtao Zhang, Xiaoxiang Wang, Beijing University of Posts and Telecommunications; Yihua Huang, Sun Yat-sen University

9 A Novel Fractional Frequency Reuse Architecture and Interference Coordination Scheme for Multi-Cell OFDMA Networks
Han Xiao, Zhiyong Feng, Beijing University of Posts and Telecommunications

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Monday 17 May 2010 16:00-17:30 R101
3A: Coding Techniques
Chair: Weisi Guo, University of Cambridge

1 Over-Complete Source-Mapping Aided AMR-WB Using Iteratively Detected Differential Space-Time Spreading
N. S. Othman, M. El-Hajjar, A. Q. Pham, O. Alamri, S. X. Ng, L. Hanzo, University of Southampton

2 On FEC Design for Interleave Division Multiple Access
Mustafa Eroz, Lin-Nan Lee, Hughes Network Systems

3 Differential Encoding for Quadrature-Amplitude Modulation
Ruey-Yi Wei, National Central University

4 Exploiting Redundancy in Iterative H.264 Joint Source and Channel Decoding For Robust Video Transmission
Nasruminallah, L. Hanzo, University of Southampton

5 A Reduced Delay Scheduling Scheme for Turbo Equalization with Serially Concatenated Turbo Codes
Shou-Sheu Lin, Yung-Che Lin, National Kaohsiung First University of Science and Technology

Monday 17 May 2010 16:00-17:30 R102
3B: Resource Allocation for Cognitive Radio I
Chair: A. S. Madhukumar, Nanyang Technological University

1 Multiple Access Scheme for Multi User Cognitive Radio Based on Wavelet Transforms
Manju Mathew, A. B. Premkumar, C. T. Lau, Nanyang Technological University

2 An Interweave Cognitive Radio System Based on the Hierarchical 2D-Spread MC-DS-CDMA with Transmission Power Control
Chih-Wen Chang, Chien-Cheng Kuo, National Cheng Kung University

3 Cross-Layer Flow Control and Dynamic Resource Allocation in Overlay Cognitive Radio Networks
Tao Lin, Xin Zhang, Qi Zheng, Qun Pan, Beijing University of Posts and Telecommunications

4 Power Allocation for OFDM-Based Cognitive Radio Systems under Primary User Activity
Chiuan-Hsu Chen, Chin-Liang Wang, National Tsing Hua University

5 Joint Overlay and Underlay Power Allocation Scheme for OFDM-Based Cognitive Radio Systems
G. Bansal, University of British Columbia; O. Duval, F. Gagnon, Ecole de Technologie Superieure

Monday 17 May 2010 16:00-17:30 R103
3C: Transmission and Use of Channel State Information
Chair: Hufei Zhu, Huawei Technologies Co., Ltd.

1 Transparent Inband Feedback for Training-Based MIMO Systems
Oussama Souihli, Tomoaki Ohtsuki, Keio University

2 Hybrid Analog/Digital CSI Feedback for Transmit Beamforming Systems in Time-Selective Fading Channels
Phoenix Yuan, Paul Ho, Simon Fraser University

3 Efficient Square-Root Algorithms for the Extended V-BLAST with Selective Per-Antenna Rate Control
Hufei Zhu, Huawei Technologies Co., Ltd.; Wen Chen, Shanghai Jiao Tong Univ.; Bin Li, Huawei Technologies Co., Ltd.

4 A Rake-Finger Based Efficient Channel State Information Feedback Compression Scheme for the MIMO OFDM FDD Downlink
Thorsten Wild, Alcatel-Lucent

5 Novel Adaptive Codebook-Based Limited Feedback Techniques for Multi-User MIMO-OFDM Systems
I-Tai Lu, Jiang Chang, Polytechnic Institute of New York University

Monday 17 May 2010 16:00-17:30 R106
3E: OFDM/OFDMA Technologies III
Chair: Fu-Chun Zheng, The University of Reading

1 A Time Domain Equalization Scheme for OFDMA Systems
Chia-Horng Liu, Chunghwa Telecom Co.. Ltd.

2 Joint Bit and Power Loading Algorithm for OFDM Systems in the Presence of ICI
Tain-Sao Chang, Tuan-Jung Hsu, National Chung Cheng University; Jyh-Horng Wen, Tunghai University; Ya-Yin Yang, National Taiwan University

3 A New Study on the Power Distribution of OFDMA, SC-FDMA and CP-CDMA Signals
George Varghese, F.-C. Zheng, University of Reading

4 CDMA and SC-FDMA Reverse Link Comparison for Cellular Voice and Data Communications
Y. Jou, R. Attar, C. Lott, J. Ma, R. Gowaikar, X. Zhang, K. Azarian-Yazdi, Qualcomm Incorporated

5 Optimal Layered Video IPTV Multicast Streaming over IEEE 802.16e WiMAX Systems
Po-Han Wu, University of Washington; Yu Hen Hu, University of Wisconsin – Madison; Jenq-Neng Hwang, University of Washington

Monday 17 May 2010 16:00-17:30 R107
3F: Scheduling
Chair: Ying Wang, Beijing University of Posts and Telecommunications

1 Inter-Domain Roaming Mechanism Transparent to IPv6-Node among PMIPv6 Networks
Soochang Park, Euisin Lee, Fucai Yu, Chungnam National University; Sungkee Noh, Electronics and Telecommunications Research Institute; Sang-Ha Kim, Chungnam National University

2 System Level Simulation of LTE Networks
Josep Colom Ikuno, Martin Wrulich, Markus Rupp, Vienna University of Technology

3 Utility Based Adaptive Scheduling Algorithm for Heterogeneous Services in Multiuser MIMO-Relay Systems
Yushan Pei, Tong Wu, Ying Wang, Hui Tian, Beijing University of Posts and Telecommunications

4 Adaptive Proportional Fair Scheduling in Multihop OFDMA Systems
Ying Wang, Gen Li, Tong Wu, Feng Gong, Beijing University of Posts and Telecommunications

5 Exploiting Tracking Area List for Improving Signaling Overhead in LTE
Sara Modarres Razavi, Di Yuan, Linkoping University; Fredrik Gunnarsson, Johan Moe, Ericsson Research

Monday 17 May 2010 16:00-17:30 R108
3G: Routing/Geographic Location Assistance
Chair: Vincent Gauthier, Telecom Sud Paris

1 Robust Geographic Routing with Virtual Destination Based Void Handling for MANETs
Shengbo Yang, Chai Kiat Yeo, Bu Sung Lee, Nanyang Technological University

2 Destination-Initiated Geographic Multicasting Protocol in Wireless Ad Hoc Sensor Networks
Jeongcheol Lee, Euisin Lee, Soochang Park, Hosung Park, Sang-Ha Kim, Chungnam National University

3 A Region-Based Reporting Scheme for Mobile Sensor Networks
Huai-Lei Fu, Ting-Yu Wang, Phone Lin, National Taiwan University; Yuguang Fang, University of Florida

4 Common Opportunistic Routing and Forwarding
Anders Nilsson Plymoth, Abhijeet Bhorkar, Per Johansson, UCSD

5 Location-Aware Relay Selection Scheme in Opportunistic Relay Communications
Jing Hu, Xiaoxiang Wang, Hongtao Zhang, Yulong Wang, Beijing University of Posts and Telecommunications

Monday 17 May 2010 16:00-17:30 R109
3H: Car-to-Car and High-Frequency Channels
Chair: Ding-Bing Lin, National Taipei University of Technology

1 Impulse Response Model and Parameters for Indoor Channel Modeling at 60GHz
Hirokazu Sawada, Hiroyuki Nakase, Shuzo Kato, Tohoku University; Masahiro Umehira, Ibaraki University; Katsuyoshi Sato, Hiroshi Harada, NICT

2 Simulation and Evaluation of Car-to-Car Communication Channels in Urban Intersection Scenarios
Lars Reichardt, Juan Pontes, Christian Sturm, Thomas Zwick, Karlsruhe Institute of Technology

3 Joint Direction Finding and Propagation Delay Estimation in the Presence of Mutual Coupling
Chun-Hung Lin, Wen-Hsien Fang, Van-Khang Vu, Yie-Tarng Chen, National Taiwan University of Science and Technology

4 Dual-Band Channel Measurements for an Advanced Tyre Monitoring System
Gregor Lasser, Christoph F. Mecklenbräuker, Vienna University of Technology

5 60 GHz Radio Channel Measurements and Modeling in a Shielded Room
Mikko Kyrö, Jarno Simola, Katsuyuki Haneda, Sylvain Ranvier, Pertti Vainikainen, Aalto University School of Science and Technology; Ken-ichi Takizawa, National Institute of Information and Communications Technology

Monday 17 May 2010 16:00-17:30 R110
3I: Coding and Transceiver Designs for Cooperative Systems
Chair: Tomoaki Ohtsuki, Keio University

1 Impact of Local-Oscillator Imperfections on Nonregenerative TDD and FDD Relaying
Stefan Berger, Armin Wittneben, ETH Zurich

2 Half-Duplex Relaying with Serially-Concatenated Low-Density Generator Matrix (SCLDGM) Codes
Yusuke Kumano, Tomoaki Ohtsuki, Keio University

3 Image-Band Interference Cancellation for Multi-Mode/Band Receivers with Baseband AGC
Ke Liu, Satoshi Denno, Kyoto University; Tatsuo Furuno, NTT DOCOMO, Inc.; Masahiro Morikura, Kyoto University

4 Distortion Behavior of Amplify-and-Forward Cooperative System with Layered Broadcast Coding
Ubolthip Sethakaset, Tony Q. S. Quek, Sumei Sun, Poramate Tarasak, Institute for Infocomm Research

5 Power Efficient Partial Repeated Cooperation Scheme with Regular LDPC Code
Meng Zheng, Zesong Fei, Xiang Chen, Jingming Kuang, Beijing Institute of Technology; Anton Blad, Linköping University

Monday 17 May 2010 16:00-17:30 International Ballroom
3Pa: Multiple Antenna Systems and Space-Time Processing II
1 Preserving Antenna-Selection Diversity in Rayleigh Fading Channels via a Time-Efficient Algorithm
Ming-Yang Chen, Stanford University; Kwang-Cheng Chen, National Taiwan University; John M. Cioffi, Stanford University

2 Hybrid Genetic Algorithm for Joint Precoding and Transmit Antenna Selection in Multiuser MIMO Systems with Limited Feedback
Shen-Chia Huang, Wen-Hsien Fang, Hung-Shiou Chen, Yie-Tarng Chen, National Taiwan University of Science and Technology

3 The Novel Iterative Interference Alignment Scheme for the SISO Interference Channel
Hui Shen, Bin Li, Huawei Technology Ltd. Corp.

4 Performance of Hybrid ARQ in Block Fading Multiantenna Channels
Ali Taha Koç, Intel Corporation; Murat Torlak, University of Texas at Dallas

5 Achievable Throughput for Dual-Mode Limited-Feedback Transmit Beamforming over Temporally Correlated Wireless Channels
Yi-Chieh Chang, Jwo-Yuh Wu, Ta-Sung Lee, National Chiao Tung University

6 Antenna Selection Based on Minimum Eigenvalue in Dual-Polarized Directional MIMO Antenna
Daisuke Uchida, Hiroyuki Arai, Yokohama National University; Yuki Inoue, Keizo Cho, NTT DOCOMO, INC.

7 Complexity-Reduced Channel Matrix Inversion for MIMO Systems in Time-Varying Channels
Wei Liu, Oregon State University; Kwonhue Choi, Yeungnam University; Huaping Liu, Oregon State University

VTC2010-Spring Program at a Glance

Time	#	R101 (A)	R102 (B)	R103 (C)	R105 (D)	R106 (E)	R107 (F)	R108 (G)	R109 (H)	R110 (I)	International Reception Hall (POSTERS)
SUNDAY 16 May											
8:00-17:30		Registration (International Reception Hall Foyer)									
9:00-17:30		Tutorials, WiVeC & Workshop: See separate program									
19:00-21:00		VTC & WiVeC Welcome Reception (The Sky Lounge)									
MONDAY 17 May											
7:30-17:30		Registration (International Reception Hall Foyer)									
8:30-9:00		Opening Ceremony (The Grand Ballroom - 12F)									
9:00-9:45		Keynote: Will Wireless Communications Be A Monster or An Angel? William C. Y. Lee (The Grand Ballroom - 12F)									
9:45-10:30		Plenary: Next Challenges in Optimizing the Wireless Physical Layer Gerhard Fettweis (The Grand Ballroom - 12F)									
10:30-11:00		Coffee and Exhibits (International Reception Hall)									
11:00-12:30	(1)	Relay Transmission	Spectrum Sensing for Cognitive Radio I	Signal Detection	WiVeC Protocol and MAC Layer	OFDM/OFDMA Technologies I	Interference Issues in Wireless Networks	Localization and Tracking	MIMO Channels	Perf. Analysis of Cooperative Relay Systems	Cognitive Radio and Cooperative Communications I; Multiple Antenna Systems and Space-Time Processing I; Transmission Technologies I
12:30-14:00		Lunch (Ji-Shiang Room - B1)									
14:00-15:30	(2)	UWB	Spectrum Sensing for Cognitive Radio II	Precoding	WiVeC Security and Privacy	OFDM/OFDMA Technologies II	Handover in Wireless Networks	Security/Detection and Tracking	Evaluation Methods and Channel Simulators	Cooperative Communications with MIMO Transceivers	Ad-Hoc and Sensor Networks I; Vehicular Electronics, Telematics, and Transportation; Wireless Access I
15:30-16:00		Coffee and Exhibits (International Reception Hall)									
16:00-17:30	(3)	Coding Techniques	Resource Allocation for Cognitive Radio I	Transmission and Use of Channel State Information	WiVeC Applications, System and Experiments	OFDM/OFDMA Technologies III	Scheduling	Routing/Geographic Location Assistance	Car-to-Car and High-Frequency Channels	Coding and Transceiver Designs for Cooperative Sys.	Multiple Antenna Systems and Space-Time Processing II; Wireless Access II; Wireless Networks I
TUESDAY 18 May											
8:00-17:30		Registration (International Reception Hall Foyer)									
9:00-9:45		Keynote: Beyond the Generations Game - Co-located vs. Distributed MIMOs Lajos Hanzo (The Grand Ballroom - 12F)									
9:45-10:30		Plenary: Enhanced Video Phone Services for NGN/IMS Yi-Bing Lin (The Grand Ballroom - 12F)									
10:30-11:00		Coffee and Exhibits (International Reception Hall)									
11:00-12:30	(4)	Channel Coding	Resource Allocation for Cognitive Radio II	Multi-antenna Signal Processing	Interference Suppression	LTE I	Broadband Wireless Networks	Mesh Networks/Routing	Safety & Environment Conscious Transport. Systems	Resource Allocation for Relay Networks	Mobile Applications, Services, and Systems; Transmission Technologies II; Wireless Networks II
12:30-14:00		Lunch (The Grand Ballroom - 12F)									
14:00-15:30	(5)	ARQ	Interference Management in Cognitive Radio Systems	Transmission Perf. Analysis & Interference Mitigation	Modulation	LTE II	Mutimedia Networking	Energy Optimization/Scheduling	Power and Energy Control in Wireless Networks	Perf. Evaluation of Wireless Access Techniques	Antennas and Propagation I; Cognitive Radio and Cooperative Communications II; Transmission Technologies III
15:30-16:00		Coffee and Exhibits (International Reception Hall)									
16:00-17:30	(6)	Transceiver Techniques	MIMO and OFDM Based Cognitive Radio	Multiuser MIMO	MIMO Systems	LTE III	Resource Allocation in Wireless Networks	Vehicular Ad Hoc Networks	Relaying in Wireless Networks	Wireless Access Technologies I	Multiple Antenna Systems and Space-Time Processing III; Wireless Access III; Wireless Networks III
18:30-21:30		VTC2010-Spring Banquet (The Grand Ballroom - 12F)									
WEDNESDAY 19 May											
8:00-14:00		Registration (International Reception Hall Foyer)									
9:00-10:30		Panel Discussion I: A Light-Hearted Panel Discussion on 'Green Radio' (The Auditorium - 10F)									
10:30-11:00		Coffee and Exhibits (International Reception Hall)									
11:00-12:30		Panel Discussion II: MIMO vs. CO-OPERATION (The Auditorium - 10F)									
12:30-14:00		Lunch (Ji-Shiang Room - B1)									
14:00-15:30	(7)	Estimation and Detection I	Cross-Layer Design for Cooperative & Cognitive Radios	Cooperative and Joint Transmission	OFDM I	MIMO Technologies	Performance Optimization in Wireless Networks	Intelligent Mobile Applications	Vehicular Communications	Wireless Access Technologies II	Antennas and Propagation II; Cognitive Radio and Cooperative Communications III; Transmission Technologies IV
15:30-16:00		Coffee and Exhibits (International Reception Hall)									
16:00-17:30	(8)	Estimation and Detection II	Distributed Space-Time Codes for Co-operative Networks	Advanced Transmission Techniques	OFDM II	Resource Allocation for Wireless Access	Access Issues in Wireless Networks	Adv. Networking Technologies for Mobile Applications	Intelligent Vehicles and Applications	Wireless Access Technologies III	Ad-Hoc and Sensor Networks II; Multiple Antenna Systems and Space-Time Processing IV; Wireless Access IV

3Pb: Wireless Access II

1 **Compressed Multicast Retransmission in LTE-A eMBMS**
Ji Li, Zhongji Hu, Yonggang Wang, Alcatel-Lucent Shanghai Bell Co., Ltd

2 **A Novel Transmission Scheme and Scheduling Algorithm for CoMP-SU-MIMO in LTE-A System**
Jing Liu, Yongyu Chang, Qun Pan, Xin Zhang, Dacheng Yang, Beijing University of Posts and Telecommunications

3 **Enhanced Dynamic Cell Selection with Muting Scheme for DL CoMP in LTE-A**
Minghai Feng, Xiaoming She, Lan Chen, DOCOMO Beijing Communications Laboratories Co.,Ltd; Yoshihisa Kishiyama, NTT DoCoMo, Inc.

4 **Performance of the LTE Uplink with Intra-Site Joint Detection and Joint Link Adaptation**
Andreas Müller, University of Stuttgart; Philipp Frank, Deutsche Telekom Laboratories; Joachim Speidel, University of Stuttgart

5 **A Novel Low Complexity Cell Search Scheme for LTE Systems**
Pin-Kai Tseng, Sen-Hung Wang, Chih-Peng Li, National Sun Yat-Sen University

6 **On the Femtocell-Based MVNO Model: A Game Theoretic Approach for Optimal Power Setting**
Wei-chih Hong, Zsehong Tsai, National Taiwan University

7 **Optimization Formulation of Packet Scheduling Problem in LTE Uplink**
Xiaoqiu Wang, Satoshi Konishi, KDDI R&D Laboratories Inc.

8 **Effect of Imperfect Channel Estimation on Multi-User Beamforming in LTE-Advanced System**
Jing Jin, Chongsheng Lin, Beijing University of Posts and Telecommunications; Qixing Wang, Research Institution of China Mobile; Hongwen Yang, Yafeng Wang, Beijing University of Posts and Telecommunications

9 **Null Sub-Carrier Aided Reference Symbol Mapping for Improved Channel Estimation in 3GPP LTE Downlink**
Siva D. Muruganathan, University of Alberta; Witold A. Krzymien, University of Alberta / TRLabs; Abu B. Sesay, University of Calgary

3Pc: Wireless Networks I

1 **A Scheme for Fast Application Identification Transferring in Mobile Networks**
Zhitao Wan, Nokia Siemens Networks

2 **OFDMA Resource Allocation and QoS Provision in Hybrid Wireless Network**
Hongxiang Li, Weiyi Zhang, Siva Vanteru, North Dakota State University

3 **The Effects of Motion on Applications in Mobile Ad-Hoc Sensor Networks**
Xusheng Sun, Edward J. Coyle, Georgia Institute of Technology

4 **A Cell-Based Decentralized Key Management Scheme for Secure Multicast in Mobile Cellular Networks**
Min-Ho Park, Young-Hoon Park, Seung-Woo Seo, Seoul National University

5 **QoS Performance Based Admission Control in Cellular Networks**
Dae-Hee Kim, Seong-Jun Oh, Korea University; Danlu Zhang, Naga Bhushan, Rajesh Pankaj, Qualcomm

6 **Amplify-and-Forward Relaying Aided Reed-Solomon Coded Hybrid-ARQ Relying on Realistic Channel Estimation**
Hoang Anh Ngo, Lajos Hanzo, University of Southampton

7 **Circuit-Switched Voice Services Over HSPA**
Ozcan Ozturk, Rohit Kapoor, Vinay Chande, Jilei Hou, Bibhu Mohanty, Qualcomm Incorporated

8 **Influence of a Few More Channels for Voice Support in B3G Multi-Service Traffic in the Presence of Mobility**
Rui R. Paulo, Fernando J. Velez, António Rodrigues, Instituto de Telecomunicações

9 **Optimized Handover Scheme Using IEEE 802.21 MIH Service in Multi-Service Environment**
Jun Yuan, Ying Wang, Fang Liu, Lei Zheng, Beijing University of Posts and Telecommunications

10 **A Robust Handover under Analysis of Unexpected Vehicle Behaviors in Vehicular Ad-Hoc Network**
Hayoung Oh, Chong-kwon Kim, Seoul National University

Tuesday 18 May 2010

4A: Channel Coding
Chair: Tad Matsumoto, Japan Advanced Institute of Science and Technology

1 **Reliability-Based Decoding for Convolutional Tail-Biting Codes**
Ting-Yi Wu, Po-Ning Chen, National Chiao-Tung University; Hung-Ta Pai, Yunghsiang S. Han, National Taipei University; Shin-Lin Shieh, Sunplus mMobile Inc.

2 **Selective-Update Decoding of Non-Binary LDPC Codes**
Sanae El Hassani, Marie-Hélène Hamon, Pierre Pénard, Orange Labs

3 **Architecture Design of QPP Interleaver for Parallel Turbo Decoding**
Shuenn-Gi Lee, Industrial Technology Research Institute; Chung-Hsuan Wang, National Chiao Tung University; Wern-Ho Sheen, Chaoyang University of Technology

4 **On the Design of Turbo Packet Combining Schemes for Relay-Assisted Systems over Multi-Antenna Broadband Channels**
Houda Chafnaji, TELECOM Bretagne; Tarik Ait-Idir, INPT; Halim Yanikomeroglu, Carleton University; Samir Saoudi, TELECOM Bretagne

5 **A Real-Time High-Throughput LDPC Decoder for IEEE 802.3an Standard**
Jui-Hui Hung, Li-Wei Kao, Sau-Gee Chen, National Chiao Tung University

4B: Resource Allocation for Cognitive Radio II
Chair: Ying-Chang Liang, Institute for Infocomm Research

1 **A Return and Risk Model for Efficient Spectrum Sharing in Cognitive Radio Networks**
Miao Pan, Hao Yue, Yuguang Fang, University of Florida; Phone Lin, National Taiwan University

2 **An ARQ Mechanism with a Priority Based Resource Allocation in Cognitive Radio Systems**
Soo-Yong Jeon, Dong-Ho Cho, KAIST

3 **Cascaded Resource Allocation among Prioritized Shared Spectrum Blocks**
Jeounglak Ha, Jin-Up Kim, ETRI; Sang-Ha Kim, Chungnam National University

4 **Adaptive Pricing for Efficient Spectrum Sharing in MIMO Systems**
Bhargav Kollimarla, Qi Cheng, Oklahoma State University

5 Markov-Based Optimal Access Probability for Dynamic Spectrum Access in Cognitive Radio Networks
Yanjun Yao, Zhiyong Feng, Dan Miao, Beijing University of Posts and Telecommunications

Tuesday 18 May 2010 11:00-12:30 R103

4C: Multi-antenna Signal Processing
Chair: Hiromasa Fujii, NTT DoCoMo, Inc.

1 Generalized MIMO Transmit Preprocessing Using Pilot Symbol Assisted Rateless Codes
Nicholas Bonello, Du Yang, Shen Chen, Lajos Hanzo, University of Southampton

2 Joint Carrier Frequency Offset and Direction of Arrival Estimation via Hierarchical ESPRIT for Interleaved OFDMA/SDMA Uplink Systems
Kuo-Hsiung Wu, Wen-Hsien Fang, Yie-Tarng Chen, National Taiwan University of Science and Technology

3 Optimum Weighting for Adaptive Array Antennas under Spectrum Sharing Environments
Hiromasa Fujii, Takahiro Asai, Tomoyuki Ohya, NTT DOCOMO, INC.

4 Beamforming for Per-Antenna Power Constrained Downlink SINR Optimization
Tai Liu, Beijing University of Posts and Telecommunications; Songtao Lu, Beihang University; Meng Zheng, Beijing Institute of Technology

5 Max-Min Antenna Selection for Bi-Directional Multi-Antenna Relaying
Mahshad Eslamifar, Nanyang Technological University; Chau Yuen, Institute for Information Research; Woon Hau Chin, Toshiba Research Europe Limited; Yong Liang Guan, Nanyang Technological University

Tuesday 18 May 2010 11:00-12:30 R105

4D: Interference Suppression
Chair: Kei Sakaguchi, Tokyo Institute of Technology

1 Iterative Narrowband Interference Suppression for DS-CDMA Systems Using Feed-Forward Neural Network
Zan Yang, Tingting Zhao, Yuping Zhao, Peking University; Jianli Yu, Zhongyuan University of Technology

2 A Two-Stage Receiver with Soft Interference Cancellation for Space-Time Block Code and Spatial Multiplexing Combined Systems
Yung-Ping Tu, Wen-Hsien Fang, Tsung-Yu Tsai, Yie-Tarng Chen, National Taiwan University of Science and Technology

3 Asymptotic Performance Analysis of Time-Frequency-Domain Spread MC DS-CDMA Systems Employing MMSE Multiuser Detection
Peng Pan, Youguang Zhang, Beihang University; Lie-Liang Yang, University of Southampton

4 Modulation Division Multiplexing for Multiuser Diversity Beamforming
Jinho Choi, Swansea University

5 A Low Complexity ICI Cancellation Scheme with Multi-Step Windowing and Modified SIC for High-Mobility OFDM Systems
Chorng-Ren Sheu, Jia-Wei Liu, Information & Communications Research Laboratories, Industrial Technology Research Institute; Chia-Chi Huang, National Chiao Tung University

Tuesday 18 May 2010 11:00-12:30 R106

4E: LTE I
Chair: Katsutoshi Kusume, DOCOMO Euro-Labs

1 DF/AF Cooperative Relay in LTE-A
Ji Li, Zhongji Hu, Yonggang Wang, Alcatel-Lucent Shanghai Bell Co Ltd

2 Performance Enhancement in LTE-Advanced Relay Networks via Relay Site Planning
Ömer Bulakci, Simone Redana, Bernhard Raaf, Nokia Siemens Networks; Jyri Hämäläinen, Aalto University

3 System Level Performance of Downlink MU-MIMO Transmission for 3GPP LTE-Advanced
Katsutoshi Kusume, Guido Dietl, DOCOMO Euro-Labs; Tetsushi Abe, Hidekazu Taoka, Satoshi Nagata, NTT DOCOMO

4 Sensitivity Analysis of the Optimal Parameter Settings of an LTE Packet Scheduler
I. Fernandez Diaz, TNO ICT; D. C. Dimitrova, University of Twente; K. Spaey, IBBT; R. Litjens, J. L. van den Berg, TNO ICT

5 Uplink Coordinated Multi-Point for LTE-A in the Form of Macro-Scopic Combining
Zheng Naizheng, Aalborg University; Malek Boussif, Claudio Rosa, Istvan Z. Kovacs, Klaus I. Pedersen, Jeroen Wigard, Nokia Siemens Networks; Preben E. Mogensen, Aalborg University

Tuesday 18 May 2010 11:00-12:30 R107

4F: Broadband Wireless Networks
Chair: Hung-Yun Hsieh, National Taiwan University

1 HSDPA Radio Capacity Improvement with Advanced Devices
Jean-Baptiste Landre, Orange labs; Ahmed Saadani, François Ortolan, Orange Labs

2 An Information Accuracy Based Mesh Division Mechanism for Cognitive Pilot Channel
Fang Tian, Zhiyong Feng, Qixun Zhang, Li Tan, Beijing University of Posts and Telecommunications

3 Design and Implementation of an Offloading Technology for 3.5G Networks
Yi-Neng Lin, Wen Chen, FiberLogic Communications; Shan-Chi Tsai, Yi-Bing Lin, National Chiao Tung University

4 Enhanced HSDPA Mobility Performance: Quality and Robustness for Voice over HSPA Service
Siddharth Mohan, Rohit Kapoor, Bibhu Mohanty, Qualcomm Inc

5 Uplink Flow Level Capacity for HSPA+ Systems
A. El Falou, S. E. Elayoubi, Orange Labs

Tuesday 18 May 2010 11:00-12:30 R108

4G: Mesh Networks/Routing
Chair: Chien-Chung Shen, University of Delaware

1 Energy-Efficient Greedy Forwarding Protocol for Wireless Sensor Networks
Bighnaraj Panigrahi, Swades De, Bhawani Sankar Panda, Indian Insitute of Technology Delhi; Jean-Daniel Lan Sun Luk, Universite de la Reunion

2 Routing Path Selection and Power Allocation for Distributed Detection in Wireless Sensor Networks
Daniel Bielefeld, Gernot Fabeck, Rudolf Mathar, RWTH Aachen University

3 PipelineOR: A Pipelined Opportunistic Routing Protocol with Network Coding in Wireless Mesh Networks
Yu-Jen Lin, Chen-Che Huang, Jiun-Long Huang, National Chiao Tung University

4 Simple and Regular Mini-Slot Scheduling for IEEE 802.16d Grid-Based Mesh Networks
Jia-Ming Liang, Jen-Jee Chen, Ho-Cheng Wu, Yu-Chee Tseng, National Chiao-Tung University

5 Max-Min Fair Throughput in Multi-Gateway Multi-Rate Mesh Networks
Dirk Staehle, Barbara Staehle, Rastin Pries, University of Wuerzburg

4H: Safety- and Environment-Conscious Transportation Systems

Chair: Bih-Yuan Ku, National Taipei University of Technology

1 Vessel Traffic Analysis for Maritime Intelligent Transportation System
Shwu-Jing Chang, Gong-Ying Hsu, Jia-Ao Yang, Kuan-Ning Chen, National Taiwan Ocean University; Yung-Fang Chiu, Fu-Tong Chang, Institute of Transportation

2 Emissions vs. Travel Time: Simulative Evaluation of the Environmental Impact of ITS
Christoph Sommer, Robert Krul, Reinhard German, Falko Dressler, University of Erlangen

3 Comparison of Lane Changing Algorithms between NGSIM and CORSIM
Li Zhang, Shangshu Cai, New Global Systems for Intelligent Transportation Corporation; Yunlong Zhang, Texas A & M; Min Zhang, New Global Systems for Intelligent Transportation Corporation

4 Transmission Interference Improvement of Railway Communication via Distributed Antennas System
Siyu Lin, Zhangdui Zhong, Bo Ai, Beijing Jiaotong University; Cesar Briso-Rodríguez, Universidad Politecnica de Madrid

5 A Real-Time System for Detecting Illegal Changes-of-Lane Based on Tracking of Feature Points
Hee-sin Lee, Sung-hwan Jeong, Joonwhoan Lee, Chonbuk National University

4I: Resource Allocation for Relay Networks

Chair: Lie-Liang Yang, University of Southampton

1 Outage Bound Analysis in Relay-Assisted Inter-Vehicular Communications
Zhaoxun Li, Hanying Hu, Longzhen Jia, Feng Li, Huaxiang Wang, Information Science & Technology College

2 Subcarrier Allocation for Multiuser Two-Way OFDMA Relay Networks with Fairness Constraints
Hanmok Shin, Jae Hong Lee, Seoul National University

3 Optimal Power Allocation for Relayed Transmission through a Mobile Relay Node
Kenan Zhou, The Chinese University of Hong Kong; Tat Ming Lok, The Chinese Univeristy of Hong Kong

4 Joint Subcarrier and Power Allocation for an OFDMA Relay Network with Multicells
Dongwook Choi, Dongwoo Lee, Jae Hong Lee, Seoul National University

5 Spectral-Efficiency of TDD Multiuser Two-Hop MC-CDMA Systems Employing Egocentric-Altruistic Relay Optimization
Tingting Liu, Lie-Liang Yang, University of Southampton; Chenyang Yang, Beihang University

4Pa: "Mobile Applications, Services, and Systems"

1 A Call Server Integrated Approach for QoS Provisioning of SIP Multimedia Services in 802.11 Wireless Networks
Whai-En Chen, National Ilan University

2 Topology Control Using Multi-Dimensional Context Parameters for Mobile P2P Networks
Hiroyuki Kubo, Ryoichi Shinkuma, Tatsuro Takahashi, Kyoto University

3 A Time Scheduling Scheme Used For Multi-Cells Indoor Localization
J. X. Lee, Francois Chin, Z. W. Lin, Institute for Infocomm Research

4 The Design and Implementation of the RUA Protocol in the Home Node B
Shin-Tsung Yang, Chai-Hien Gan, Industrial Technology Research Institute

5 A Hierarchical Clustering Technique for Radio Map Compression in Location Fingerprinting Systems
Azin Arya, Philippe Godlewski, INSTITUT/TELECOM ParisTech; Philippe Mellé, SFR

6 Technical Analysis and Implementation Cost Assessment of Sigma-Point Kalman Filtering and Particle Filtering in Autonomous Navigation Systems
Gerasimos G. Rigatos, Industrial Systems Institute

4Pb: Transmission Technologies II

1 A Sub-Band Based Technique for Low Power Medium Data Rate Ultra Wide Band Communication
Kiran Bynam, Jinesh P. Nair, Debarati Sen, Rahul Sinha, Arun Naniyat, Samsung India Software Operations

2 Low-Complexity Reduced-Rank Interference Mitigation Algorithms for DS-UWB Systems
Sheng Li, Rodrigo C. de Lamare, University of York

3 Coded QAM in Multicode CDMA Systems
Bin Xia, Huawei Technologies, Shanghai; Huiling Zhu, University of Kent

4 Analysis of a Noncoherent UWB Receiver for Multichannel Signals
Paul Meissner, Klaus Witrisal, Graz University of Technology

5 Exact Performance Evaluation of the UWB Differential Transmitted Reference System in Multiuser Environments
Tsan-Ming Wu, Yi-Fang Hou, Chung Yuan Christian University

6 An Accurate Performance Analysis of Hybrid TH/DS Multiple Access UWB System Using N-ary Biorthogonal PPM
Ye-Shun Shen, National Formosa University; Fang-Biau Ueng, National Chung-Hsing University

7 Geometric-View-Based Evaluation of Generalized Marcum Q-Function
Hua Fu, Pooi Yuen Kam, Rong Li, National University of Singapore

8 Fast Correlation for Gold Large Sets of Kasami Sequences
Ping Yi Zhang, Jiang Wu, Jie Wang, Southeast University

9 Two-Level FH-CDMA Wireless Communication Systems Using Quadratic Congruence Codes
Kun-Ling Chiang, Sung-Ming Wu, Hung-Wei Chen, Guu-Chang Yang, National Chung Hsing University; Cheng-Yuan Chang, National United University; Wing C. Kwong, Hofstra University

10 Analysis of Multipath Interference of SRAKE Receivers in UWB Systems
Jiaqi Zhang, Zhenyu Xiao, Ning Ge, Tsinghua University

11 NDA SNR Estimation with Phase Lock Detector for Digital QPSK Receivers
Hua Wang, Chaoxing Yan, Jingming Kuang, Nan Wu, Zesong Fei, Meng Zheng, Beijing Institute of Technology

4Pc: Wireless Networks II

1 Dual-Cell HSDPA for Network Energy Saving
Gilbert Micallef, Aalborg University; Preben Mogensen, Hans-Otto Scheck, Nokia Siemens Networks

2 File Transfer for Mobile Devices in Heterogeneous Radio Networks
Chih-Wei Yi, Shau-Shiuan Yang, Yi-Bing Lin, Yi-Ta Chuang, National Chiao Tung University; Pin-Chuan Liu, Industrial Technology Research Institute

3 Flat-Rate Packet Scheduling for the WCDMA Systems with HSDPA
Chung-Yung Chia, Telecommunication Laboratory of Chunghwa Telecom; Ming-Feng Chang, National Chiao Tung University, Hsinchu

4 Teletraffic Model for the Performance Evaluation of Cellular Networks with Hyper-Erlang Distributed Cell Dwell Time
Anum L. Enlil Corral-Ruiz, Felipe A. Cruz-Pérez, CINVESTAV-IPN; Genaro Hernández-Valdez, UAM-A

5 Condensed Downlink MAP Structures for IEEE 802.16e Wireless Metropolitan Area Networks (MANs)
Shiann Tsong Sheu, Ming Huei Tsai, National Central University; Tsung-Yu Tsai, Yi-Hsueh Tsai, Institute for Information Industry

6 An Efficient Retransmission Scheme for MIMO Two-Way Relay Network Employing Network Coding
Gia Khanh Tran, Kei Sakaguchi, Kiyomichi Araki, Tokyo Institute of Technology

7 Nested Distributed Turbo Code for Relay Channels
Md Anisul Karim, Jinhong Yuan, The University of New South Wales; Zhuo Chen, CSIRO ICT Center

8 Utility-Aware Network Coding in Wireless Butterfly Networks
Jin-Yup Hwang, Jinyoung Oh, Junhyeong Kim, Youngnam Han, Korea Advanced Institute of Science and Technology

9 A Novel Inter-Cell Interference Coordination Scheme Based on Dynamic Resource Allocation in LTE-TDD Systems
YuNan Han, YongYu Chang, Jie Cui, DaCheng Yang, Beijing University of Posts and Telecommunications

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Tuesday 18 May 2010 14:00-15:30 R101
5A: ARQ
Chair: Sun Sumei, Institute for Infocomm Research

1 Two-Level HARQ for Turbo Coded Cooperation
Haïfa Fares, Charlotte Langlais, Alexandre Graell i Amat, Telecom Bretagne; Marion Berbineau, LEOST Laboratory

2 Single-Carrier Hybrid ARQ Using Joint Transmit/Receive MMSE-FDE
Kazuki Takeda, Fumiyuki Adachi, Tohoku University

3 HARQ for Predetermined-Rate Multicast Channel
Fuminori Takahashi, Kenichi Higuchi, Tokyo University of Science

4 Multi-Level Turbo Decoding Assisted Soft Combining Aided Hybrid ARQ
H. Chen, R. G. Maunder, L. Hanzo, University of Southampton

5 Generalized Constellation Rearrangement in Cooperative Relaying
Akram Bin Sediq, Petar Djukic, Halim Yanikomeroglu, Carleton University; Jietao Zhang, Huawei Technologies CO., LTD.

Tuesday 18 May 2010 14:00-15:30 R102
5B: Interference Management in Cognitive Radio Systems
Chair: Maurizio Murroni, University of Cagliari

1 Evaluation of Spectrum Occupancy in Amsterdam Using Mobile Monitoring Vehicles
Roel Schiphorst, Cornelis H. Slump, University of Twente

2 Spectrum Sharing with Interference Management for Distributed Cognitive Radio Networks: A Potential Game Approach
I Wayan Mustika, Koji Yamamoto, Hidekazu Murata, Susumu Yoshida, Kyoto University

3 On Power and Rate Adaptation for Cognitive Radios in an Interference Channel
Chin Choy Chai, Institute for Infocomm Research

4 Interference Protection in Cognitive Radio Networks
Mohammad Iqbal Bin Shahid, Joarder Kamruzzaman, Monash University

5 Interference Mitigation Using Power Control in Cognitive Radio Networks
Mohamed Elalem, Lian Zhao, Zaiyi Liao, Ryerson University

Tuesday 18 May 2010 14:00-15:30 R103
5C: Transmission Performance Analysis and Interference Mitigation
Chair: YoungJu Kim and Xun Li, Chungbuk National University

1 An Inter-Cell Interference Mitigation Scheme Based on MIMO-Relay Technique
Hui Tian, Xi-jun Wang, Fan Jiang, Gang Deng, Key Laboratory of Universal Wireless Communications, Ministry of Education; Beijing University of Posts & Telecommunications; Jie-tao Zhang, Huawei Co., Ltd

2 On the SINR Distribution for an Orthogonal Random Beamforming System and Its Performance
Chanhong Kim, Kyeongjun Ko, Sungkyu Jung, Jungwoo Lee, Seoul National University

3 Impact of Frequency Selective Channels on a Line-of-Sight MIMO Microwave Radio Link
Tryggvi Ingason, Haonan Liu, Chalmers University of Technology; Mikael Coldrey, Ericsson AB; Andreas Wolfgang, Qamcom AB; Jonas Hansryd, Ericsson AB

4 Performance Analysis of Equal Gain Transmission Technique for SC-FDMA System
Xun Li, YoungJu Kim, Noeyoon Park, Chungbuk National University

5 Uplink Post-Coding for Inter-Cell Interference Cancellation in 4G Mobile Broadband Systems
Mythri Hunukumbure, Luciano Sarperi, Sunil Vadgama, Fujitsu Laboratories of Europe Ltd.

Tuesday 18 May 2010 14:00-15:30 R105
5D: Modulation
Chair: Sau-Gee Chen, National Chiao Tung University

1 A Noncoherent Coded MPSK Scheme with Near-Capacity Performance for Channels with Fast Phase Variation
Yen-Ming Chen, Yeong-Luh Ueng, Ying-Chen Chao, National Tsing Hua University

2 Efficient Channel Quality Feedback Signaling Using Transform Coding and Bit Allocation
Behrooz Makki, Thomas Eriksson, Chalmers University of Technology

3 Noncoherently Non-Catastrophic Trellis Coded QAM
Ruey-Yi Wei, Chang-Chih Huang, National Central University

4 Higher Order Moments of Error Rates of Digital Modulations
Mohamed A. M. Hassanien, Pavel Loskot, Swansea University

5 Rate Adaptation of AMC/HARQ Systems with CQI Errors
Chia-Hao Yu, Arttu Hellsten, Olav Tirkkonen, Aalto University

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5E: LTE II

Chair: Andreas Mueller, University of Stuttgart

1 A Study of Precoding for LTE TDD Using Cell Specific Reference Signals
Fan Sun, Aalborg University; Muhammad Imadur Rahman, David Astély, Ericsson Research

2 Improved Recursive Maximum Expansion Scheduling Algorithms for Uplink Single Carrier FDMA System
Fang Liu, Xiaoming She, Lan Chen, Hiroyuki Otsuka, DOCOMO Beijing Communications Laboratories Co, Ltd

3 System Optimization in Relay Enhanced LTE-Advanced Networks via Uplink Power Control
Ömer Bulakci, Simone Redana, Bernhard Raaf, Nokia Siemens Networks; Jyri Hämäläinen, Aalto University

4 Interference Analysis and Coexistence Studies between E-UTRA and UTRA Systems
Jing Wang, Dacheng Yang, Ruiming Zheng, Xin Zhang, Beijing University of Posts and Telecommunications

5 Cooperative Interference Prediction for Enhanced Link Adaptation in the 3GPP LTE Uplink
Andreas Müller, University of Stuttgart; Philipp Frank, Deutsche Telekom Laboratories

5F: Mutimedia Networking

Chair: Shih-Hau Fang, Yuan Ze University

1 Optimum Physical-Layer Frame Size for Maximising the Application-Layer Rateless Code's Effective Throughput
T. Stevens, R. G. Maunder, L. Hanzo, University of Southampton

2 Area Coverage with Unmanned Vehicles: A Belief-Based Approach
Evsen Yanmaz, Christian Bettstetter, University of Klagenfurt

3 The Design and Implementation of IEEE 802.21 and Its Application on Wireless VoIP
Tein-Yaw Chung, Yung-Mu Chen, Pu-Chen Mao, Chen-Kuan Tsai, Sheng-Wen Lai, Chun-Po Chen, Yuan Ze University

4 A Case Study on Multiparty Calls Differentiation in the IP Multimedia Subsystem
May El Barachi, University of Quebec (ETS); Roch Glitho, University of Quebec (ETS) / Concordia University (CIISE); Rachida Dssouli, Concordia University / United Arab Emirates University

5 Cross-Layer Adaptive H.264/AVC Streaming over IEEE 802.11e Experimental Testbed
Cheng-Han Mai, Yin-Cheng Huang, Hung-Yu Wei, National Taiwan University

5G: Energy Optimization/Scheduling

Chair: Jiun-Long Huang, National Chiao Tung University

1 Energy Optimization for Reliable Point-to-Point Communication in Energy-Constrained Networks
Felipe M. Costa, Hideki Ochiai, Yokohama National University

2 Improving Energy Efficiency in QoS-Enabled Wireless Sensor Networks
Liqi Shi, Abraham O. Fapojuwo, University of Calgary

3 A Framework for Topology-Transparent Scheduling in Wireless Networks
Qiong Sun, Victor O. K. Li, Ka-Cheong Leung, The University of Hong Kong

4 Energy-Efficient Scheduling for Multiple-Target Coverage in Wireless Sensor Networks
Sung-Yeop Pyun, Dong-Ho Cho, Korea Advanced Institute of Science and Technology

5 Energy-Efficient Adaptive Transmission Scheme in a Correlated Wireless Sensor Network
Jaehyun Park, Joohwan Chun, Korea Advanced Institute of Science and Technology

5H: Power and Energy Control in Wireless Networks

Chair: Chun-Ting Chou, National Taiwan University

1 Effect of Information on Routing Performance in Multi-Hop Wireless Networks
Jun Hong, Victor O. K. Li, The University of Hong Kong

2 On Modeling the Effect of Peak-Load Pricing Mechanism to the Telecommunication Traffic
Tito Husein Batubara, National University of Singapore; Chew Yong Huat, Manjeet Singh, Institute for Infocomm Research

3 Power Control Game with SINR-Pricing in Variable-Demand Wireless Data Networks
Fu-Yun Tsuo, Wei-Lin Lee, Chih-Yu Wang, Hung-Yu Wei, National Taiwan University

4 Power Saving Mechanism in IEEE 802.16m
Yunju Park, Hansung Leem, Dan Keun Sung, Korea Advanced Institute of Science and Technology

5 Traffic Demand and Energy Efficiency in Heterogeneous Cellular Mobile Radio Networks
Fred Richter, Albrecht J. Fehske, Patrick Marsch, Gerhard P. Fettweis, Technische Universitaet Dresden

5I: Performance Evaluation of Wireless Access Techniques

Chair: Chiung-Jang Chen, Chung-Hua Telecom

1 Performance Evaluation of Frequency Planning in a Novel Cellular Architecture Based on Sector Relay
Lin Qu, Xiaoxiang Wang, Yulong Wang, Jianxin Liao, Beijing University of Posts and Telecommunications

2 Exact Capture Probability Analysis of GSC Receivers over Rayleigh Fading Channel
Sung Sik Nam, Hanyang University; Mohamed-Slim Alouini, KAUST; Mazen O. Hasna, Qatar University

3 Design and Analysis of Data-Aided Coarse Carrier Frequency Recovery in DVB-S2
Hua Wang, Chaoxing Yan, Jingming Kuang, Nan Wu, Zesong Fei, Meng Zheng, Beijing Institute of Technology

4 Impact of Frequency Diversity and Multi-User Diversity in IFDMA
Yuichi Kazama, Akira Yamasaki, Koichi Adachi, Masao Nakagawa, Keio University

5 To Piggyback or Not to Piggyback Acknowledgments?
Tsern-Huei Lee, National Chiao Tung University; Yaw-Wen Kuo, National Chi Nun University; Yu-Wen Huang, Yung-Hsiang Liu, National Chiao Tung University

5Pa: Antennas and Propagation I

1 Maximum Averaged Likelihood Estimation Tree for Anchor-Less Localization Exploiting IR-UWB Multipaths
V. La Tosa, B. Denis, CEA-Leti Minatec; B. Uguen, IETR-CNRS, Université Rennes-I

2 Optimization of ARMA(p,q) Models for SISO Multipath Fading Channel Simulation with Arbitrary Correlation
Diogo Mera, Instituto de Engenharia de Sistemas e Computadores-Investigação e Desenvolvimento; Gonçalo Tavares, INESC-ID and Instituto Superior Técnico

3 Analysis of Local Quasi-Stationarity Regions in an Urban Macrocell Scenario
Adrian Ispas, Gerd Ascheid, RWTH Aachen University; Christian Schneider, Reiner Thomä, Ilmenau University of Technology

4 A Wideband Space Time Statistical Model for Characterization of Satellite Communication Channel in Dense Multipath Environment
Songtao Lu, Beihang University; Tai Liu, Beijing University of PostsTelecommunications; Meng Zheng, Beijing Institute of Technology

5 Empirical Time-Spatial Propagation Formula for Outdoor NLOS and LOS Environments
Teruya Fujii, Hideki Omote, Yoshichika Ohta, SoftBank Mobile Corp.

Tuesday 18 May 2010 14:00-15:30 International Ballroom
5Pb: Cognitive Radio and Cooperative Communications II
1 Quantization and Transmission of the Energy Measures for Cooperative Spectrum Sensing
Olivier van den Biggelaar, Jean-Michel Dricot, Philippe De Doncker, François Horlin, Université Libre de Bruxelles

2 User Cooperation under Multiplex Transmission Scheme in Cognitive Radio Network
Yingwei Wang, Shengnan Yan, Hongtao Zhang, Yihua Huang, Beijing University of Posts and Telecommunications

3 Virtual Polarization Detection: A Vector Signal Sensing Method for Cognitive Radios
Fangfang Liu, Chunyan Feng, Caili Guo, Yue Wang, Dong Wei, Beijing University of Posts and Telecommunications

4 A Novel Adaptive Cooperative MAC Protocol for Wireless LANs
Zhenfeng Song, Xiaoxiang Wang, Hongtao Zhang, Zhen Liu, Beijing University of Posts and Telecommunications

5 MMSE-SIC Transceiver Design in Amplify-and-Forward MIMO Relay Systems
Fan-Shuo Tseng, Wen-Rong Wu, National Chiao-Tung University

6 Performance Analysis of Adaptive L-QAM for Opportunistic Decode-and-Forward Relaying
Salama S. Ikki, Osama Amin, Murat Uysal, University of Waterloo

7 Performance Evaluation of Joint Network-Channel Coding under a Real Network Topology Model
Kun Pang, Zihuai Lin, Yonghui Li, Branka Vucetic, The University of Sydney

8 Transmission Probability Control Game for Coexisting Random ALOHA Wireless Networks in Unlicensed Bands
Alireza Babaei, Bijan Jabbari, George Mason University

9 Cooperative MISO and Relay Comparison in Energy Constrained WSNs
Tuan-Duc Nguyen, Olivier Berder, Olivier Sentieys, IRISA - University of Rennes

10 A New Pulse for CR-UWB Using Multiple Modified TDCS
Shubin Wang, Inner Mongolia University; Zheng Zhou, Beijing University of Posts and Telecommunications; Kyungsup Kwak, Inha

University; Weixia Zou, Beijing University of Posts and Telecommunications

11 A Reliability-Based Detection Algorithm for MIMO Relay System
Rui Gao, Xin Zhang, Dacheng Yang, Kai Wu, Beijing University of Posts and Telecommunications

Tuesday 18 May 2010 14:00-15:30 International Ballroom
5Pc: Transmission Technologies III
1 Performance Analysis of Antenna Calibration in Coordinated Multi-Point Transmission System
Fan Huang, Jian Geng, Yafeng Wang, Dacheng Yang, Beijing University of Posts and Telecommunications

2 Novel Channel Estimation Techniques on SC-FDMA Uplink Transmission
Shih-Chan Huang, Jia-Chin Lin, Kao-Peng Chou, National Central University

3 Power and Spectrally Efficient Multiple Access Using CPM over SC-FDMA
Marilynn P. Wylie-Green, Nokia Siemens Networks; Tommy Svensson, Chalmers University of Technology; Erik Perrins, University of Kansas

4 Interference Cancellation for Single Carrier Frequency Domain Equalizer without Cyclic Prefix
Hankil Lee, Yusung Lee, Kyungsul Ahn, Hyuncheol Park, KAIST

5 Adaptive Inter-Atom Interference Mitigation Approach to Sparse Multi-Path Channel Estimation
Ruiming Yang, Qun Wan, Yipeng Liu, Wanlin Yang, University of Electronic Science and Technology of China

6 Channel Estimation and Equalization Algorithms for Long Range Bluetooth Signal Reception
Ingolf Held, Silicon Hive; Albert Chen, ITRI

7 Improved Opportunistic Multipath Transmission for Bandwidth-Efficient Cooperative Communications
Chang-Chen Chu, Chin-Liang Wang, National Tsing Hua University

8 Receiver Multiuser Diversity Aided Multi-Stage MMSE Multiuser Detection: A Low-Complexity Detector Fast-Converging to the Optimum
Lie-Liang Yang, University of Southampton

9 MMSE Frequency-Domain Equalization Using Spectrum Combining for Nyquist Filtered Broadband Single-Carrier Transmission
Suguru Okuyama, Kazuki Takeda, Fumiyuki Adachi, Tohoku University

10 Joint Frequency-Domain Equalization & Spectrum Combining for the Reception of SC Signals in the Presence of Timing Offset
Tatsunori Obara, Kazuki Takeda, Fumiyuki Adachi, Tohoku University

Tuesday 18 May 2010 16:00-17:30 R101
6A: Transceiver Techniques
Chair: Dah-Chung Chang, National Central University

1 On the Impact of Non-Linear Amplifiers in Single-Carrier Systems: An Analytical Approach
Jan Dohl, Stefan Krone, Gerhard Fettweis, Technical University Dresden

2 On Power Amplifier Efficiency with Modulated Signals
Tommy Svensson, Thomas Eriksson, Chalmers University of Technology

3 A Simple DBPSK Modem Based on High-Speed Logical Gates for a 70/80 GHz GbE Microwave Link
Jonas Hansryd, Jingjing Chen, Yinggang Li, Bengt-Erik Olsson, Ericsson AB

4 A New Algorithm for Carrier Frequency Offset Estimation in the Presence of I/Q Imbalance
Yen-Chang Pan, See-May Phoong, National Taiwan University

5 Architectures for Joint Compensation of RoF and PA with Nonideal Feedback
Atso Hekkala, Mika Lasanen, VTT Technical Research Centre of Finland; Luis C. Vieira, Nathan J. Gomes, Anthony Nkansah, University of Kent

6B: MIMO and OFDM Based Cognitive Radio
Chair: Ying-Chang Liang, Institute for Infocomm Research

1 On Asynchronous OFDM Implementation for Cognitive Radio
Meng Wah Chia, Ying-Chang Liang, Institute for Infocomm Research

2 Cooperative Feedback in Multi-Antenna Cognitive Networks
Kaibin Huang, Yonsei University; Rui Zhang, Institute for Infocomm Research

3 Antenna Correlation Based Spectrum Sensing in Cognitive Radio Systems
Joong-Hyup Lee, Dong-Chan Oh, Yong-Hwan Lee, Seoul National University

4 Prediction-Based Spectrum Aggregation with Hardware Limitation in Cognitive Radio Networks
Furong Huang, Wei Wang, Haiyan Luo, Guanding Yu, Zhaoyang Zhang, Zhejiang University

5 Robust Linear Transceiver Design in MIMO Ad Hoc Cognitive Radio Networks
Ebrahim A. Gharavol, National University of Singapore; Ying-Chang Liang, Institute of Infocomm Research; Koen Mouthaan, National University of Singapore

Tuesday 18 May 2010 16:00-17:30 R103

6C: Multiuser MIMO
Chair: Daisuke Uchida, Yokohama National University

1 An Orthogonal Projection Optimization Algorithm for Multi-User MIMO Channels
Zhendong Zhou, Branka Vucetic, The University of Sydney

2 Ant-Colony Based Near-ML Space-Time Multiuser Detection for the STBC Assisted DS-CDMA Uplink
Chong Xu, Lie-Liang Yang, Lajos Hanzo, University of Southampton

3 An Adaptive Multiuser MIMO Receive Algorithm with Radial Space-Division Multiple Access in OFDM System
Yejian Chen, Bell Laboratories, Alcatel-Lucent Germany

4 Sorted QR Decomposition Based Detection for MU-MIMO LTE Uplink
Shaoqing Chen, Wenjin Wang, Shi Jin, Xiqi Gao, Southeast University

5 Joint Selection with Multi-Streams for Multiuser MIMO Systems with Block Diagonalization
Donghun Lee, Junil Ahn, Yonwon Seo, Kiseon Kim, Gwangju Institute of Science and Technology (GIST)

Tuesday 18 May 2010 16:00-17:30 R105

6D: MIMO Systems
Chair: Yoshitaka Hara, Mitsubishi Electric Co.

1 Blind Channel Estimation for MIMO Systems with Nonlinearities at the Receiver
S. Alireza Banani, Rodney G. Vaughan, Simon Fraser University

2 Impact of User Selection Criteria on Performance of MIMO Detectors in Multiuser Systems
Jinho Choi, Swansea University; Fumiyuki Adachi, Tohoku University

3 A New Iterative Channel Estimation for High Mobility MIMO-OFDM Systems
Wibowo Hardjawana, Rui Li, Branka Vucetic, Yonghui Li, The University of Sydney; Xuezhi Yang, Huawei Tech. Co

4 Optimizing Training-Based MIMO Systems: How Much Time is Needed for Actual Transmission?
Xiangyun Zhou, Parastoo Sadeghi, Tharaka A. Lamahewa, The Australian National University

5 PAPR Reduction Method for Block Diagonalization in Multiuser MIMO-OFDM Systems
Shusaku Umeda, Satoshi Suyama, Hiroshi Suzuki, Kazuhiko Fukawa, Tokyo Institute of Technology

Tuesday 18 May 2010 16:00-17:30 R106

6E: LTE III
Chair: Riikka Susitaival, Ericsson

1 Impact of Electrical and Mechanical Antenna Tilt on LTE Downlink System Performance
Fredrik Athley, Martin N. Johansson, Ericsson AB

2 Channel Quality Indicator Preamble for Discontinuous Reception
Kari Aho, Jani Puttonen, Magister Solutions Ltd.; Tero Henttonen, Lars Dalsgaard, Nokia

3 Internet Access Performance in LTE TDD
Riikka Susitaival, Henning Wiemann, Jessica Östergaard, Anna Larmo, Ericsson Research

4 User Multiplexing in Relay Enhanced LTE-Advanced Networks
Oumer Teyeb, Aalborg University; Frank Frederiksen, Vinh Van Phan, Bernhard Raaf, Simone Redana, Nokia Siemens Networks

5 Link Parameters Bundling across Multiple Component Carriers in LTE-A Uplink
Gilberto Berardinelli, Troels B. Sørensen, Preben Mogensen, Aalborg University; Kari Pajukoski, Nokia-Siemens Networks

Tuesday 18 May 2010 16:00-17:30 R107

6F: Resource Allocation in Wireless Networks
Chair: Nak-Myeong Kim, Ewha Womans University

1 Resource Allocation Scheme for Minimizing Uplink Interference in Hierarchical Cellular Networks
Sung-Yeop Pyun, Dong-Ho Cho, KAIST

2 Resource Allocation for Heterogeneous Services Per User in OFDM Distributed Antenna Systems
Cong Shi, Ying Wang, Tan Wang, Lisha Ling, Wireless Technology Innovation Institute

3 Resource Allocation in OFDMA Systems in the Presence of Packet Retransmission
Xiaoyan Liu, Huiling Zhu, University of Kent

4 Dynamic Resource Allocation with Threshold in OFDMA-based Relay Networks
Mingwei Tang, Xiaoxiang Wang, Yulong Wang, Jianxin Liao, Beijing University of Posts and Telecommunications

5 Adaptive Resource Management Based on Unequal Error Protection in OFDM Systems
Huiling Zhu, University of Kent

Tuesday 18 May 2010 16:00-17:30 R108

6G: Vehicular Ad Hoc Networks
Chair: Yuh-Shyan Chen, National Taipei University

1 VERGILIUS: A Scenario Generator for VANET
Eugenio Giordano, University of California Los Angeles; Enzo De Sena, King's College London; Giovanni Pau, Mario Gerla, University of California Los Angeles

2 Event Suppression for Safety Message Dissemination in VANETs
Martin Koubek, Susan Rea, Dirk Pesch, Cork Institute of Technology

3 Streetcast: An Urban Broadcast Protocol for Vehicular Ad-Hoc Networks
Chih-Wei Yi, Yi-Ta Chuang, Hou-Heng Yeh, Yu-Chee Tseng, National Chiao Tung University; Pin-Chuan Liu, Industrial Technology Research Institute

4 Linear Regression-Based Delay-Bounded Routing Protocols for Vehicular Ad Hoc Networks
Yuh-Shyan Chen, National Taipei University; Chih-Shun Hsu, Shih Hsin University; Yi-Guang Siao, National Taipei University

5 Dynamic Channel Reservation to Enhance Channel Access by Exploiting Structure of Vehicular Networks
Ray K. Lam, P. R. Kumar, University of Illinois at Urbana-Champaign

Tuesday 18 May 2010 16:00-17:30 R109
6H: Relaying in Wireless Networks
Chair: Wen-Hsing Kuo, Yuan-Ze University

1 Network Synchronization for Two-Way Multi-Hop Relay Networks with Block Modulation
Keiichi Mizutani, Kei Sakaguchi, Kiyomichi Araki, Tokyo Institute of Technology

2 An Economics-Based Distributed Multicast Scheme for Wireless Relay Networks
Wen-Hsing Kuo, Yuan Ze University

3 Interworking Scheme Using Optimized SIP Mobility for MultiHomed Mobile Nodes in Wireless Heterogeneous Networks
Paolo Dini, Jaume Nin-Guerrero, Josep Mangues-Bafalluy, CTTC; Lillian I. Dai, Sateesh Addepalli, Cisco

4 Rate-Loss Based Channel Assignment in Multi-Rate Wireless Mesh Networks
Kate Ching-Ju Lin, Academia Sinica; Sz-Ting Shen, Cheng-Fu Chou, National Taiwan University

5 MIMO Radio Propagation Measurement for Two-Hop Relay Network on L-Shaped Corridor with Network Performance Analysis
Namzilp Lertwiram, Gia Khanh Tran, Keiichi Mizutani, Kei Sakaguchi, Kiyomichi Araki, Tokyo Institute of Technology

Tuesday 18 May 2010 16:00-17:30 R110
6I: Wireless Access Technologies I
Chair: David Tung Chong Wong, Institute for Infocomm Research

1 Airtime Fairness in a Rate Separation IEEE 802.11b MAC
David Tung Chong Wong, Anh Tuan Hoang, Chen Khong Tham, Institute for Infocomm Research

2 Study on a Dynamic Superframe Adjustment Algorithm for IEEE 802.15.4 LR-WPAN
Bih-Hwang Lee, National Taiwan University of Science and Technology; Huai-Kuei Wu, Ling Tung University

3 Coexistence of 802.11b and 802.15.4a-CSS: Measurements, Analytical Model and Simulation
Andreas Lewandowski, Markus Putzke, Volker Köster, Christian Wietfeld, Dortmund University of Technology

4 Cross-Layer Solutions for Cooperative Medium Access Control Protocols
Alessandro Crismani, Fulvio Babich, University of Trieste; Lajos Hanzo, University of Southampton

5 A Distributed Access Point Selection Algorithm Based on No-Regret Learning for Wireless Access Networks
Lin Chen, University of Paris-Sud XI

Tuesday 18 May 2010 16:00-17:30 International Ballroom
6Pa: Multiple Antenna Systems and Space-Time Processing III
1 Hardware Prototype for Two-Way Multi-Hop Relay Network with MIMO Network Coding
Keiichi Mizutani, Tokyo Institute of Technology; Takehiro Miyamoto, Takamichi Kanno, Nihon Dengyo Kosaku Co., Ltd.; Kei Sakaguchi, Kiyomichi Araki, Tokyo Institute of Technology

2 Efficient Group Competition-Based User Selection Scheme for Multiuser Beamforming in High Order MIMO Broadcast Systems
Yang Lan, Zhan Zhang, Hidetoshi Kayama, DOCOMO Beijing Communications Laboratories Co., Ltd

3 BER Based Multiuser MIMO User Selection with Block Diagonalization
Kyeongjun Ko, Kyungchul Kim, Jungwoo Lee, Seoul National University

4 Scheduling, Pairing and Ordering in the Network Coded Uplink Multiuser MIMO Relay Channels
Jie Xu, Ling Qiu, University of Science and Technology of China; Tafzeel ur Rehman Ahsin, Slimane Ben Slimane, The Royal Institute of Technology (KTH)

5 Urban Outdoor MIMO Experiments with Realistic Handset and Base Station Antennas
Eckhard Ohlmer, Jörg Hofrichter, Steffen Bittner, Gerhard Fettweis, Qiong Wang, Hui Zhang, Klaus Wolf, Dirk Plettemeier, Technische Universität Dresden

6 Antenna Configurations for 4x4 MIMO in LTE - Field Measurements
Karl Werner, Johan Furuskog, Mathias Riback, Bo Hagerman, Ericsson AB

7 Improved User Scheduling Algorithms for Codebook Based MIMO Precoding Schemes
Bo-mi Lim, Kyungsul Ahn, Haelyong Kim, Hyuncheol Park, KAIST; Gye-Tae Gil, KT

Tuesday 18 May 2010 16:00-17:30 International Ballroom
6Pb: Wireless Access III
1 Directional Relay with Spatial Time Slot Scheduling for mmWave WPAN Systems
Zhou Lan, Junyi Wang, Jing Gao, Chin-Sean Sum, Fumihide Kojima, Tuncer Baykas, Hiroshi Harada, Shuzo Kato, NICT

2 Visibility State Model for Base Station Cooperation in Cellular Mobile Systems
Shinobu Nanba, Megumi Morita, Yoji Kishi, KDDI R&D Laboratories Inc.

3 Deterministic Channel Access in WiMedia MAC Protocol
Hyunhee Park, Sangheon Pack, Yongsun Kim, Chul-Hee Kang, Korea University; Sungho Hwang, Samsung Electro-Mechanics

4 Comprehensive Performance Comparison of IDMA and CDMA
Shu-Ming Tseng, Tai-Yo Lau, National Taipei University of Technology

5 MAC Efficiency Enhancement with ACK/NACK and AGC Pilot Signal Adaptation Mechanism in Millimeter-Wave Communication Systems
Ryoko Matsuo, Tomoya Tandai, Hideo Kasami, Takahiro Kobayashi, Toshiba Corporation

6 An Efficient Scheduling Algorithm for Scheduled Automatic Power Save Delivery for Wireless LANs
Tsern-Huei Lee, Jing-Rong Hsieh, Institute of Communication Engineering

7 Performance Analysis of Dual-Carrier HSDPA
Danlu Zhang, Pavan Kumar Vitthaladevuni, Bibhu Mohanty, Jilei Hou, Qualcomm Inc

8 Study on Co-Existence of Macro WCDMA Cell and Micro HSUPA Cell
Yushu Zhang, Beijing Jiaotong University; Xinglin Wang, Xiaokun Yang, Nokia Siemens Networks; Xiaojin Zhang, Beijing Jiaotong University

9 Wideband Radio over Fiber Distributed Antenna Systems for Energy Efficient In-Building Wireless Communications
M. Crisp, R. V. Penty, I. H. White, University of Cambridge; A. Bell, Zinwave Ltd.

6Pc: Wireless Networks III

1. **Handover Scheme Using Uplink and Downlink Channel Information in IEEE 802.16e Systems**
Ji-Su Kim, Jae-Hyun Kim, Ajou University

2. **A Two-Level Distributed Sub-Carrier Allocation Algorithm Based on Ant Colony Optimization in OFDMA Systems**
Rui Lin, Kai Niu, Wenjun Xu, Zhiqiang He, Beijing University of Posts and Telecommunications

3. **Applications of Modulation in a McEliece-Like Symmetric-Key Scheme**
Wenyan Leng, Lin Sang, Chengxin Xu, Xin Zhang, Beijing University of Posts and Telecommunications

4. **Multi-Room IPTV Delivery through Pseudo-Broadcast over IEEE 802.11 Links**
Yongtae Park, Chiho Jo, Sangki Yun, Hyogon Kim, Korea University

5. **Numerical Algorithms for Multi-Cell Optimal Downlink Beamforming Problem with Per-Base Station Power Constraints**
Fan Huang, Yafeng Wang, Jian Geng, Dacheng Yang, Beijing University of Posts and Telecommunications

6. **Throughput Analysis of Stop-and-Wait Automatic Repeat Request Scheme for Network Coding Nodes**
Yang Qin, Lie-Liang Yang, University of Southampton

7. **A Novel Retransmission Scheme for Video Services in Hybrid Wireline/Wireless Networks**
Jinfang Zhang, Wenliang Liang, Jianjun Wu, Dai Shi, Huawei Technologies Co., Ltd.

8. **Association Control Based Load Balancing for Tactical Information Communication Networks**
Kiran T. Nath, Dongmyoung Kim, Sunghyun Choi, Seoul National University

9. **A Systematic LT Coded Arrangement for Transmission over Correlated Shadow Fading Channels in 802.11 Ad-Hoc Wireless Networks**
Hoang Anh Ngo, Tim Steven, Robert G. Maunder, Lajos Hanzo, University of Southampton

10. **Adaptive-Weighting Schemes for Location-Based Services over Heterogeneous Wireless Networks**
Sheng-Cheng Yeh, Wu-Hsiao Hsu, Ming Chuan University; Yih-Shyh Chiou, National Tsing Hua University

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Wednesday 19 May 2010

7A: Estimation and Detection I

Chair: Satoshi Denno, Kyoto University

1. **Phase-Based Carrier Frequency Estimators for Linear Modulations over Selective Fading Channels**
Yan Li, Pooi Yuen Kam, National University of Singapore; Chee-Cheon Chui, DSO National Laboratories

2. **Frequency Offset Estimation in 3G LTE**
Pierre Bertrand, Texas Instruments Inc.

3. **Stochastic Resonance Pre-Processing for Estimating Doppler Frequency Shift under Low SNR Conditions**
Liping Wu, Zan Li, Jiandong Li, Yongxing Sun, Xidian University; Yi Li, Air Force Engineering University

4. **Subspace-Based Blind Channel Estimation for OFDM Systems with Conjugate-Symmetric Property**
Shih-Hao Fang, National Cheng-Kung University; Ju-Ya Chen, National Sun Yat-sen University; Ming-Der Shieh, Jing-Shiun Lin, National Cheng-Kung University

5. **A New Method for Timing Synchronization in OFDM Systems Based on Polyphase Sequences**
Amin Azari, Said Nadr Esfahani, University of Tehran; Mahdi Golparvar Roozbahani, Iran Telecommunication Research Center

7B: Cross-Layer Designs for Cooperative and Cognitive Radios

Chair: Hung-Yu Wei, National Taiwan University

1. **Sensing-Saturated Throughput Performance in Multiple Cognitive CSMA/CA Networks**
David Tung Chong Wong, Francois Chin, Institute for Infocomm Research

2. **A Cooperative Graph Approach for Cooperative Routing in Delay-Sensitive Systems**
Leo K. Y. Lam, Wai P. Tam, Tat M. Lok, The Chinese University of Hong Kong

3. **On QoS Routing in Wireless Ad-Hoc Cognitive Radio Networks**
Yean-Fu Wen, National Chiayi Unversity; Wanjiun Liao, National Taiwan University

4. **Channel-Aware Transmission Control for Cooperative Random Access Networks**
Shu-Hsien Wang, An-Dee Lin, Y.-W. Peter Hong, National Tsing Hua University

5. **Joint Channel Assignment and Routing in Cognitive Radio-Based Wireless Mesh Networks**
Dong Heon Lee, Wha Sook Jeon, Seoul National University; Dong Geun Jeong, Hankuk University of Foreign Studies

7C: Cooperative and Joint Transmission

Chair: Ming-Yang Chen, Stanford University

1. **Adaptive Turbo Trellis Coded Modulation Aided Distributed Space-Time Trellis Coding for Cooperative Communications**
Soon Xin Ng, Chuyi Qian, Dandan Liang, Lajos Hanzo, University of Southampton

2. **Spectral Efficiency of the Distributed MIMO System with Antenna Cooperation**
Hua-Min Chen, National Mobile Communication Research Lab., Southeast University; Jun-Bo Wang, Nanjing University of Aeronautics and Astronautics; Ming Chen, National Mobile Communication Research Lab., Southeast University

3. **A Novel Precoding Method for MIMO Systems with Multi-Cell Joint Transmission**
Di Lu, Dong Li, Alcatel-Lucent Shanghai Bell

4. **A Practical Design of Downlink Coordinated Multi-Point Transmission for LTE-Advanced**
Jianchi Zhu, Xiaoming She, Xiang Yun, Lan Chen, Hiroyuki Otsuka, DOCOMO Beijing Communications Laboratories Co., Ltd.

5. **On the Performance of Joint Processing Schemes over the Cluster Area**
Carmen Botella, Tommy Svensson, Chalmers University of Technology; Xiaodong Xu, Hui Zhang, Beijing University of Posts and Telecommunications

7D: OFDM I

Chair: Hsi-Pin Ma, National Tsing Hua University

1 Link Quality Prediction Using Shadowing Time-Frequency Correlation in Multi-Carrier Wireless Networks
Alain Mourad, Samsung Electronics Research Institute

2 Downlink Transmission in Multi-Carrier Systems with Reduced Feedback
Yuanye Wang, Aalborg University; Klaus I. Pedersen, Nokia Siemens Networks; Troels B. Sørensen, Aalborg University; Preben E. Mogensen, Aalborg University, Nokia Siemens Networks

3 Frequency-Domain Oversampling Based Receivers for Orthogonal Frequency Division Multiplexing: Linear MMSE and Nonlinear VBLAST Algorithms
Qinghua Shi, Y. Karasawa, The University of Electro-Communications

4 A Low-PAPR Multiplexed MC-CDMA System with Enhanced Data Rate over Multipath Channels
Juinn-Horng Deng, Shu-Min Liao, Yuan Ze University

5 Fast Prioritized Bit-Loading and Subcarriers Allocation for Multicarrier Systems
Khaled Hassan, Werner Henkel, Jacobs University

Wednesday 19 May 2010 14:00-15:30 R106

7E: MIMO Technologies

Chair: Wei-Cheng Liu, National Chung Cheng University

1 Performance Analysis of 64-QAM and MIMO in Release 7 WCDMA (HSPA+) Systems
Vinay Chande, Haitong Sun, Pavan Kumar Vitthaladevuni, Jilei Hou, Bibhu Mohanty, Qualcomm

2 HSDPA Performance with Dual Stream MIMO in a Combined Macro-Femto Cell Network
Timo Nihtilä, Magister Solutions Ltd.; Ville Haikola, Nokia

3 Streaming Video Capacity Comparisons of Multi-Antenna LTE Systems
Anup Talukdar, Bishwarup Mondal, Mark Cudak, Amitava Ghosh, Fan Wang, Motorola Inc.

4 Multi-Flow Transmission in Cellular Systems with Optimal Scheduling and Utility Maximization
Wai P. Tam, Tat M. Lok, The Chinese University of Hong Kong

5 Reference Signal Design for Flexible MIMO Operation in LTE-Advanced Downlink
Tommi Koivisto, Nokia Devices R&D; Karol Schober, Helsinki University of Technology; Tero Kuosmanen, Tampere University of Technology; Timo Roman, Mihai Enescu, Nokia Devices R&D

Wednesday 19 May 2010 14:00-15:30 R107

7F: Performance Optimization in Wireless Networks

Chair: Kai-Ten Feng, National Chiao Tung University

1 Load Balancing in Downlink LTE Self-Optimizing Networks
Andreas Lobinger, Szymon Stefanski, Nokia Siemens Networks; Thomas Jansen, Technical University of Braunschweig; Irina Balan, Interdisciplinary Institute for Broadband Technology

2 Threat Analysis of Incubation Period in Malware Epidemics
Seong-Woo Kim, Jong-Ho Park, Eun-Dong Lee, Mid-Eum Choi, Seung-Woo Seo, Seoul National University

3 Inter-Cell Interference Coordination in OFDMA Networks: A Novel Approach Based on Integer Programming
Mahmudur Rahman, Halim Yanikomeroglu, Carleton University

4 Coverage and Capacity Optimization in E-UTRAN Based on Central Coordination and Distributed Gibbs Sampling
Tao Cai, Georgios P. Koudouridis, Christer Qvarfordt, Johan Johansson, Peter Legg, R&D centre, Huawei Technologies Sweden AB

5 A Light-Size AKA Mechanism for Optimal Distributed AAA Authorization Architecture
Wenjing Ma, Mei Song, Beijing University of Posts and Telelcomm

Wednesday 19 May 2010 14:00-15:30 R108

7G: Intelligent Mobile Applications

Chair: Guey-Yun Chang, National Central University

1 Exploiting Multi-Link SCTP for Live TV Broadcasting Service
Hsing-Shao Liu, Ching-Chia Hsieh, Hsin-Chun Chen, Chih-Hung Hsieh, Wanjiun Liao, National Taiwan University; Po-Cheng Chu, Chia-Hui Wang, Ming Chuan University

2 Hybrid Cargo-Level Tracking System for Logistics
Guang-Hua Yang, Kuang Xu, Victor O.K. Li, The University of Hong Kong

3 A Distributed Taxi Hailing Protocol in Vehicular Ad-Hoc Networks
Jang-Ping Sheu, National Tsing Hua University; Guey-Yun Chang, Chiung-Hung Chen, National Central University

4 Zooming: A Zoom-Based Approach for Parking Space Availability in VANET
Guey-Yun Chang, National Central University; Jang-Ping Sheu, National Tsing Hua University; Cheng-Yu Chung, National Central University

5 Digital Right Management and Software Protection on Android Phones
Chen-Yuan Chuang, Yu-Chun Wang, Chunghwa Telecom Co., Ltd.; Yi-Bing Lin, National Chiao Tung University

Wednesday 19 May 2010 14:00-15:30 R109

7H: Vehicular Communications

Chair: Hsiao Kuang Wu, National Central University

1 3G HSPA for Broadband Communications with High Speed Vehicles
Santiago Tenorio, Vodafone; Paul Spence, McLaren Electronic Systems; Beatriz Garriga, Javier López, Aitor García, Miguel Arranz, Vodafone

2 Improved Decoding Methods of Visible Light Communication System for ITS Using LED Array and High-Speed Camera
Toru Nagura, Takaya Yamazato, Masaaki Katayama, Tomohiro Yendo, Nagoya University; Toshiaki Fujii, Tokyo Institute of Technology; Hiraku Okada, Saitama University

3 Eliminating Backhaul Bottlenecks for Opportunistically Encountered Wi-Fi Hotspots
Richard Gass, Intel Labs; Christophe Diot, Thomson

4 Reliably Suppressed Broadcasting for Vehicle-to-Vehicle Communications
John Lee, Wai Chen, Telcordia Technologies, Inc.

5 Exploiting Network Coding for Data Forwarding in Delay Tolerant Networks
Kun-Cheng Chung, Yi-Chin Li, Wanjiun Liao, National Taiwan University

Wednesday 19 May 2010 14:00-15:30 R110

7I: Wireless Access Technologies II

Chair: Fujio Watanabe, DoCoMo USA Labs

1 Design of Data-Aided SNR Estimator Robust to Frequency Offset for MPSK Signals
Chaoxing Yan, Hua Wang, Jingming Kuang, Nan Wu, Meng Zheng, Beijing Institute of Technology

2 Performance of Open Access Femtocell Networks with Different Cell-Selection Methods
Hisham A. Mahmoud, Ismail Güvenç, Fujio Watanabe, DOCOMO USA Labs

3 Nomadic Relay-Directed Joint Power and Subchannel Allocation in OFDMA-Based Cellular Fixed Relay Networks
Mohamed Salem, Abdulkareem Adinoyi, Halim Yanikomeroglu, Carleton University; Young-Doo Kim, Samsung Electronics

4 Adaptive Subcarrier Grouping for Downlink MC-CDMA Systems with MMSE Receiver
Jun-Bo Wang, Nanjing University of Aeronautics and Astronautics; Hua-Min Chen, Ming Chen, Xinhua Xue, Southeast University

5 Applicability of Interference Coordination in Highly Loaded HSUPA Network
Frans Laakso, University of Jyväskylä; Kari Aho, Magister Solutions Ltd.; Thomas Chapman, Roke Manor Research Ltd.; Tapani Ristaniemi, University of Jyväskylä

Wednesday 19 May 2010 14:00-15:30 International Ballroom
7Pa: Antennas and Propagation II
1 A Measurement Based Approach to Spatially Predict the Orthogonality Factor of the UMTS Downlink
Jürgen Beyer, Heinz Droste, Deutsche Telekom

2 Cauchy Angular Distribution for Clustered Radio Propagation SIMO Channel Model
Xin Li, Torbjörn Ekman, Norwegian University of Science and Technology

3 Multiple-Links NLoS Error Evaluations for Geolocation Channel Modelling
Wei Wang, Thomas Jost, German Aerospace Center (DLR)

4 Large Scale Parameter for the WINNER II Channel Model at 2.53 GHz in Urban Macro Cell
Christian Schneider, Milan Narandzic, Martin Käske, Gerd Sommerkorn, Reiner S. Thomä, Technische Universität Ilmenau

5 Inducing Spatial Correlation on MIMO Channels: A Distribution-Free Efficient Technique
Antonio Petrolino, INESC-ID Lisbon; Gonçalo Tavares, INESC-ID Lisbon, IST-UTL Lisbon

Wednesday 19 May 2010 14:00-15:30 International Ballroom
7Pb: Cognitive Radio and Cooperative Communications III
1 Distributed Spectrum Sharing Algorithm Design and Realization
Binyang Xu, Feng Yang, Jigang Qiu, Di Lu, Alcatel-Lucent Shanghai Bell

2 Collaborative Change Detection for Efficient Spectrum Sensing in Cognitive Radio Networks
Teng-Cheng Hsu, National Tsing Hua University; Tsang-Yi Wang, National Sun Yat-sen University; Y.-W. Peter Hong, National Tsing Hua University

3 Partner Selection Based on IDMA Superposition Modulation in Cooperative Cellular Networks
Xiaoxiang Wang, Hongtao Zhang, Dezhi Li, Beijing University of Posts and Telecommunications

4 A Practical Semi Range-Based Localization Algorithm for Cognitive Radio
Zaili Wang, Zhiyong Feng, Jingqun Song, Yang Hu, Ping Zhang, Key Laboratory of Universal Wireless Communications, Ministry of Education

5 Partner Selection and Power Control for Asymmetrical Collaborative Networks
Weisi Guo, Ioannis Chatzigeorgiou, Ian J. Wassell, University of Cambridge; Rolando Carrasco, University of Newcastle

6 Optimal Resource Allocation for Cognitive Radio Networks with Imperfect Spectrum Sensing
Kejian Wu, Wei Wang, Haiyan Luo, Guanding Yu, Zhaoyang Zhang, Zhejiang University

7 Optimal Cooperative Spectrum Sensing Strategies in Cognitive Radio Networks
Jingqun Song, Jiantao Xue, Zhiyong Feng, Ping Zhang, Zemin Liu, Beijing University of Posts and Telecommunications

8 Cyclostationarity Based Multi-Antenna Spectrum Sensing in Cognitive Radio Networks
Guohui Zhong, Jiaming Guo, Zhen Zhao, Daiming Qu, Huazhong University of Science & Technology

9 Novel Cooperative Schemes on Spectrum Sensing in Multi-Primary-User Cognitive Radio Network
Jingdi Liu, Xin Zhang, Ruiming Zheng, Qun Pan, Dacheng Yang, Beijing University of Posts and Telecommunications

10 On Joint Power Control and Adaptive Modulation for Cognitive Radios
Chin Choy Chai, Institute for Infocomm Research

11 Primary and Cognitive User Cooperative Spectrum Sensing in OFDMA Air Interface
Sanjeewa P. Herath, Nandana Rajatheva, Asian Institute of Technology; Poompat Saengudomlert, Asian Institute of Technoloogy

Wednesday 19 May 2010 14:00-15:30 International Ballroom
7Pc: Transmission Technologies IV
1 Modification of SOVA-Based Algorithms for Efficient Hardware Implementation
Lay-Hong Ang, Wee-Guan Lim, Lund University; Matthias Kamuf, Ericsson AB

2 Extrinsic Information Setting for Belief Propagation Decoding with Network Coding
Naohiro Tsuji, Tomoaki Ohtsuki, Keio University

3 Reference Phasor Based Log-Likelihood Ratios for Pilot-Symbol-Assisted BPSK Transmission of LDPC Codes over the Noncoherent Channel
Elisa Mo, Pooi Yuen Kam, National University of Singapore

4 On the Performance Evaluation of Quasi-Cyclic LDPC Codes with Arbitrary Puncturing
Ying Xu, Yuejun Wei, Huawei Technologies Co., Ltd; Wen Chen, Shanghai Jiao Tong University

5 Performance Evaluation for LDPC Coded OFDM-IDMA Systems over Frequency Selective Fading Channels
Wei-Chieh Huang, National Taiwan University; Kuo-Sheng Lu, Chih-Peng Li, National Sun Yat-Sen University; Hsueh-Jyh Li, National Taiwan University

6 Chained Turbo Equalization for Block Transmission without Guard Interval
Khoirul Anwar, Zhou Hui, Japan Advanced Institute of Science and Technology (JAIST); Tad Matsumoto, Japan Advanced Institute of Science and Technology, University of Oulu

7 Low Complexity Metrics for BICM SISO and MIMO Systems
Rizwan Ghaffar, Raymond Knopp, EURECOM

8 Common Information Multicast with Different Data Rates
Yuli Yang, King Abdullah University of Science and Technology (KAUST); Sonia Aissa, University of Quebec

9 Combining of Forward and Backward Multiple-Symbol Differential Sphere Decoding for Turbo Coded System
Ching-Chi Lo, Szu-Lin Su, National Cheng Kung University

10 Superposition Coding Aided Bi-Directional Relay Transmission Employing Iteratively Decoded Self-Concatenated Convolutional Codes
Muhammad Fasih Uddin Butt, Rong Zhang, Soon Xin Ng, Lajos Hanzo, University of Southampton

8A: Estimation and Detection II

Chair: Wen-Hsien Fang, National Taiwan University of Science and Technology

1 A Low Complexity Piecewise Suboptimal Detector for Signals in Alpha-Stable Interference
Tarik S. Shehata, Ian Marsland, Mohamed El-Tanany, Carleton University

2 A Novel Framework for Signal Detection in Alpha-Stable Interference
Tarik S. Shehata, Ian Marsland, Mohamed El-Tanany, Carleton University

3 Improved Chirp Parameter Estimation Using Signal Recovery Method
Yan Li, Pooi Yuen Kam, National University of Singapore

4 A Near-Capacity Differentially Encoded Non-Coherent Adaptive Multiple-Symbol-Detection Aided Three-Stage Coded Scheme
Li Wang, Lingkun Kong, Soon Xin Ng, Lajos Hanzo, University of Southampton

5 Blind Channel Estimation for Systems with Maximum-Ratio Receiver Combining
S. Alireza Banani, Rodney G. Vaughan, Simon Fraser University

Wednesday 19 May 2010 16:00-17:30 R102

8B: Distributed Space-Time Codes for Cooperative Networks

Chair: Sau-Hsuan Wu, National Chiao Tung University

1 Multiple-Relay Aided Distributed Turbo Coding Assisted Differential Unitary Space-Time Spreading for Asynchronous Cooperative Networks
S. Sugiura, S. X. Ng, L. Kong, S. Chen, L. Hanzo, University of Southampton

2 Distributed Convolutional-Coded Differential Space-Time Block Coding for Cooperative Communications
Soon Xin Ng, Yang Wang, Lajos Hanzo, University of Southampton

3 Relaying Through Distributed GABBA Space-Time Coded Amplify-and-Forward Cooperative Networks With Two-Stage Power Allocation
Hung-Shiou Chen, Wen-Hsien Fang, Yie-Tarng Chen, National Taiwan University of Science and Technology

4 A Novel Hybrid Relaying Scheme Using Multilevel Coding
Yinan Qi, Reza Hoshyar, Rahim Tafazolli, University of Surrey

5 Diversity and Delay-Limited Throughput Analysis for the Effective Cooperative ARQ Protocols with Opportunistic Distributed Space-Time Coding
Hsin-Li Chiu, Sau-Hsuan Wu, National Chiao Tung University; Jin-Hao Li, National Taiwan University

Wednesday 19 May 2010 16:00-17:30 R103

8C: Advanced Transmission Techniques

Chair: Kenichi Higuchi, Tokyo University of Science

1 Over-the-Air Inter-Node Carrier Phase Synchronization for Coherent Transmission
Yoshitaka Hara, Noriyuki Fukui, Hiroshi Kubo, Mitsubishi Electric Corporation

2 Joint Iterative Power Allocation and Interference Suppression Algorithms for Cooperative DS-CDMA Networks
Rodrigo C. de Lamare, Sheng Li, University of York

3 St. Petersburg Paradoxes in Performance Analysis of Adaptive Wireless Systems
Adrian Kotelba, Aarne Mämmelä, VTT Technical Research Centre of Finland

4 Cooperative Versus Receiver Coded Diversity with Low-Complexity Encoding and Decoding
Saif E. A. Alnawayseh, Pavel Loskot, Swansea University

5 Downlink Transmit Diversity for Broadband Single-Carrier Distributed Antenna Network
Hiroki Matsuda, Kazuki Takeda, Fumiyuki Adachi, Tohoku University

Wednesday 19 May 2010 16:00-17:30 R105

8D: OFDM II

Chair: Mohamed Moustafa, Akhbar El Yom Academy

1 MMSE Solution for OFDMA Systems with Carrier Frequency Offset Correction
Dah-Chung Chang, National Central University; Tsung-Han Li, ITRI

2 A New Out-Of-Band Power Suppression Scheme by Extending Effective Cyclic-Prefix of OFDM
Yong Jiang, Yi Wang, Huawei Technologies Co., Ltd.

3 Clipping and Filtering-Based PAPR Reduction Method for Precoded OFDM-MIMO Signals
Masao Iwasaki, Kenichi Higuchi, Tokyo University of Science

4 Performance Analysis of Alamouti Coded OFDM Systems over Rayleigh Fading Channels Correlated in Space and Time
Yuanyuan Ma, Matthias Pätzold, University of Agder

5 An Iterative Method for Carrier Frequency Offset Estimation in OFDM Systems via Scattered Pilots
Lin Bai, Qinye Yin, Xi'an Jiaotong University

Wednesday 19 May 2010 16:00-17:30 R106

8E: Resource Allocation for Wireless Access

Chair: Yung-Fang Chen, National Central University

1 Carrier Aggregation in LTE-Advanced
Rapeepat Ratasuk, Dominic Tolli, Amitava Ghosh, Motorola Inc

2 Chunk Allocation Schemes for SC-FDMA Systems
Wei-Cheng Pao, Yung-Fang Chen, National Central University

3 Resource Allocation for Wireless Multi-Carrier Network with Receiver Cooperation
Peng Zhang, City University of Hong Kong; Kenneth W. Shum, The Chinese University of Hong Kong; Chi Wan Sung, City University of Hong Kong

4 A Combined MAC and Physical Resource Allocation Mechanism in IEEE 802.16e Networks
Sondes Khemiri, Guy Pujolle, LIP6-University of Paris 6; Khaled Boussetta, Nadjib Achir, L2TI-University of Paris 13

5 Joint Call Admission Control and Resource Allocation for H.264 SVC Transmission Over OFDMA Networks
Mohammud Z. Bocus, University of Bristol; Justin P. Coon, Toshiba Research Europe Limited; C. Nishan Canagarajah, Joseph P. McGeehan, Simon M. D. Armour, Angela Doufexi, University of Bristol

Wednesday 19 May 2010 16:00-17:30 R107

8F: Access Issues in Wireless Networks

Chair: Jiann-Liang Chen, National Taiwan University of Science and Technology

1 Efficient Simulation using Shadowing Fields of Many Wireless Interferers with Correlated Shadowing
Sebastian S. Szyszkowicz, Furkan Alaca, Halim Yanikomeroglu, Carleton University; John S. Thompson, University of Edinburgh

2 A Site-Specific Study of In-Building Wireless Solutions
Zhen Liu, Troels Sørensen, Aalborg University; Jeroen Wigard, Jolma Petri, Troels Kolding, Nokia Siemens Networks; Preben Mogensen, Nokia Siemens Networks and Aalborg University

3 Contention-Based Neighborhood Estimation
Helmut Adam, Evsen Yanmaz, Wilfried Elmenreich, Christian Bettstetter, University of Klagenfurt

4 An ARQ Mechanism with Rate Control for Two-Hop Relaying Systems
Soo-Yong Jeon, Dong-Ho Cho, KAIST

5 Robust 60 GHz Indoor Connectivity: Is It Possible with Reflections?
Zulküf Genç, Umar H. Rizvi, Ertan Onur, Ignas Niemegeers, Delft University of Technology

Wednesday 19 May 2010 16:00-17:30 R108
8G: Advanced Networking Technologies for Mobile Applications
Chair: Jung-Chun Kao, National Tsing Hua University

1 Predictive and Context-Aware Multimedia Content Delivery for Future Cellular Networks
Pietro Lungaro, Zary Segall, Jens Zander, The Royal Institute of Technology (KTH)

2 Multi-Group Wireless Multicast Broadcast Services Using Adaptive Modulation and Coding: Modeling and Analysis
Yu-Cheng Liang, Ching-Chun Chou, Hung-Yu Wei, National Taiwan University

3 iWBC-MIDP Client Application Design and Implementation
Zhanlin Ji, Ivan Ganchev, Máirtín O'Droma, University of Limerick

4 A First-Order Markov Model for Wellness Mobile Applications
Aravind Kailas, Georgia Institute of Technology; Chia-Chin Chong, Fujio Watanabe, DOCOMO USA Labs

5 H.264 Wireless Video Telephony Using Iteratively-Detected Binary Self-Concatenated Coding
Nasruminallah, Muhammad Fasih Uddin Butt, Soon Xin Ng, Lajos Hanzo, University of Southampton

Wednesday 19 May 2010 16:00-17:30 R109
8H: Intelligent Vehicles and Applications
Chair: John Lee, Telcordia

1 G-Constellations: G-Sensor Motion Tracking Systems
Chih-Wei Yi, Chao-Min Su, Wen-Tien Chai, Jiun-Long Huang, National Chiao Tung University; Tsun-Chieh Chiang, Industrial Technology Research Institute

2 An Eye State Recognition Method for Drowsiness Detection
Yu-Shan Wu, Ting-Wei Lee, Quen-Zong Wu, Heng-Sung Liu, Chunghwa Telecommunication Laboratories

3 A Reinforcement Learning Based Power Assisted Method with Comfort of Riding for Light Electric Vehicle
Roy Chaoming Hsu, Cheng-Ting Liu, Wei-Ming Lee, Chih-Hsiang Chen, National Chiayi University

4 Redundant Dissimilar Sensor Fusion with Dynamic Driver Input Classification and Graceful Degradation for Drive-by-Wire Applications
Neal Y. Lii, German Aerospace Center; Stefan Sturm, The BMW Group; Timothy A. Coombs, University of Cambridge

5 Radio Channel Measurements at Street Intersections for Vehicle-to-Vehicle Safety Applications
Johan Karedal, Fredrik Tufvesson, Taimoor Abbas, Lund University; Oliver Klemp, Delphi Delco Electronics Europe GmbH; Alexander Paier, Technische Universität Wien; Laura Bernadó, Forschungszentrum Telekommunikation Wien; Andreas F. Molisch, University of Southern California

Wednesday 19 May 2010 16:00-17:30 R110
8I: Wireless Access Technologies III
Chair: Shaoyi Xu, Nokia

1 Effective Labeled Time Slots Based D2D Transmission in Cellular Downlink Spectrums
Shaoyi Xu, Beijing Jiaotong University; Haiming Wang, Nokia (China) Investment CO., LTD.; Tao Peng, Beijing University of Posts and Telecommunications; Qing Huang, Beijing Jiaotong University

2 Cost Based Local Forwarding Transmission Schemes for Two-Hop Cellular Networks
Zhengguang Zhao, Xuming Fang, Yan Long, Xiaopeng Hu, Yue Zhao, Southwest Jiaotong University; Yang Liu, Yuqin Chen, Hongyun Qu, Ling Xu, ZTE Corporation

3 Adaptive Precoder Selection for Multicast/Broadcast Service in MIMO-OFDMA Systems
Hsu-Chieh Hu, Yen-Huan Li, Ping-Cheng Yeh, GICE, National Taiwan University

4 An Accurate Analytical Model for Overloaded DS-CDMA under Imperfect Synchronization
Sujit Jos, C-DOT; Preetam Kumar, IIT Patna; Saswat Chakrabarti, IIT Kharagpur

5 Generalized Proportionally Fair Scheduling for Multi-User Amplify-and-Forward Relay Networks
Alireza Sharifian, Petar Djukic, Halim Yanikomeroglu, Carleton University; Jietao Zhang, Huawei Technologies Co., Ltd.

Wednesday 19 May 2010 16:00-17:30 International Ballroom
8Pa: Ad-Hoc and Sensor Networks II

1 A Cross-Layer Design Based on Geographic Information for Cooperative Wireless Networks
Teck Aguilar, Mohamed Chedly Ghedira, Telecom Sud Paris; Syue-Ju Syue, National Tsing Hua University; Vincent Gauthier, Hossam Afifi, Telecom Sud Paris; Chin-Liang Wang, National Tsing Hua University

2 Low-Complexity Channel Estimation for Cooperative Wireless Sensor Networks Based on Data Selection
Tong Wang, Rodrigo C. de Lamare, Paul D. Mitchell, Uni of York

3 One-Bit Quantizer Design for Distributed Estimation under the Minimax Criterion
Tao Wu, Qi Cheng, Oklahoma State University

4 Network Status Detection-Based Dynamic Adaptation of Contention Window in IEEE 802.11p
Hung-Chin Jang, Wen-Chieh Feng, National Chengchi University

5 Experimental Comparison of Dynamic Spectrum Access Techniques for Wireless Sensor Networks
Luca Stabellini, Muhammad Umar Javed, The Royal Institute of Technology

6 Efficiency of Distributed Compression and Its Dependence on Sensor Node Deployments
Frank Oldewurtel, Janne Riihijärvi, Petri Mähönen, RWTH Aachen University

7 Delay Analysis of Enhanced Relay-Enabled Distributed Coordination Function
Rizwan Ahmad, Victoria University; Fu-Chun Zheng, University of Reading; Micheal Drieberg, Victoria University

8 Scheduling for MIMO Networks with Rate-Constrained Connectivity Requirements
Feng Jiang, Jianqi Wang, A. Lee Swindlehurst, University of California, Irvine

9 Distributed TDoA Estimation for Wireless Sensor Networks Based on Frequency-Hopping in Multipath Environment
Weile Zhang, Qinye Yin, Xue Feng, Wenjie Wang, Xi'an Jiaotong University

10 Analysis of Enhanced Deployment Models for Sensor Networks
Frank Oldewurtel, Petri Mähönen, RWTH Aachen University

Wednesday 19 May 2010 16:00-17:30 International Ballroom
8Pb: Multiple Antenna Systems and Space-Time Processing IV

1 System Layer Evaluation of Imperfect Adaptive Beam-Forming Antenna for Mixed Services in the LTE TDD System
Ruiming Yang, Yongyu Chang, Shuhui Liu, Dacheng Yang, Beijing University of Posts & Telecommunications

2 Upper Bounds for the Analysis of Trellis Coded Spatial Modulation over Correlated Fading Channels
Marco Di Renzo, French National Center for Scientific Research (CNRS); Raed Y. Mesleh, Jacobs University Bremen; Harald Haas, Peter M. Grant, The University of Edinburgh

3 Performance of the Space-Time Block Coded DS-CDMA Uplink Employing Soft-Output ACO-Aided Multiuser Space-Time Detection and Iterative Decoding
Chong Xu, Mohammed El-Hajjar, Rob G. Maunder, Lie-Liang Yang, Lajos Hanzo, University of Southampton

4 Exact SER and Diversity Gain Analysis of SDM-STBC MIMO Systems over Flat Fading Channels
Chun-Ning Chiu, Tsung-Hsien Liu, National Chung Cheng University

5 On the Cooperative and Non-Cooperative Relaying in WiMAX Communication Systems
K. Fakih, CISTEME; A. Belhouji, M. Mouhamadou, C. Decroze, D. Carsenat, XLIM, University of Limoges

6 Instantaneous Symbol Error Outage Probability over Fading Channels with Imperfect Channel State Information
Mingwei Wu, Pooi Yuen Kam, National University of Singapore

7 Error Probability Analysis of Unselfish Cooperation over Quasi-Static Fading Channels
Ioannis Chatzigeorgiou, Weisi Guo, Ian J. Wassell, University of Cambridge; Rolando Carrasco, Newcastle University

Wednesday 19 May 2010 16:00-17:30 International Ballroom
8Pc: Wireless Access IV
1 Distributed Multiple Access and Flow Control for Wireless Network Coding
Christian Ibars, Lorenza Giupponi, Centre Tecnologic de Telecomunicacions de Catalunya - CTTC; Sateesh Addepalli, Cisco Systems Inc.

2 A Study of G-Distribution Statistical Properties under Fractional Network Loading
Jussi Turkka, Tampere University of Technology

3 Distributed Antenna Systems with Power Adjusted Beam Switching
Tao Wu, Young Hoon Kwon, Huawei Technologies (USA); Jiayin Zhang, Yi Wang, Huawei Technologies Co., Ltd.

4 Predictive Techniques for Enabling Fast and Accurate Medium Access Control in Distributed Power-Controlled Networks
Stepan Kucera, Bing Zhang, NICT

5 Blind Collision Resolution Using Cooperative Transmission
Junliang Yao, Xidian University; Xiaoniu Yang, No.36 Research Institute of China Electronics Technology Group Corporation; Jiandong Li, Zhao Li, Yan Zhang, Xidian University

6 Rateless Multiple Access over Erasure Channel
Kedi Wu, Zhaoyang Zhang, Shaolei Chen, Zhejiang University

7 A Novel Frequency Reuse Scheme for Coordinated Multi-Point Transmission
Jingya Li, Hui Zhang, Xiaodong Xu, Xiaofeng Tao, Beijing University of Posts and Telecommunications; Tommy Svensson, Carmen Botella, Chalmers University of Technology; Baoling Liu, Beijing University of Posts and Telecommunications

8 Downlink Power Control Scheme for Smart Antenna Based Wireless Systems
Woongsup Lee, Dong-Ho Cho, KAIST

9 Dynamic Packet Scheduling for Traffic Mixes of Best Effort and VoIP Users in E-UTRAN Downlink
Guillaume Monghal, Aalborg University; Daniela Laselva, Per-Henrik Michaelsen, Jeroen Wigard, Nokia Siemens Networks

Tutorials

A range of tutorials will be held throughout the conference given by experts from industry and academia.

Sunday, 16 May, 8.30 – 12.00
T1: Cooperative Wireless Communications
Lajos Hanzo, University of Southampton

This tutorial introduces the principles of cooperative communication, commencing with the introduction of four basic MIMO types, namely

1. Beamforming;
2. Space-time coding;
3. Spatial Division Multiplexing;
4. Spatial Division Multiple Access;

Their limitations are highlighted and it is shown, how the single-antenna-aided cooperative mobile may circumvent these limitations.

The corresponding amplify-forward and decode-forward protocols as well as their hybrids are studied. Sophisticated multi-stage iterative channel coding schemes are proposed and it is argued that in the absence of accurate channel information at the relays the best way forward might be to use multiple-symbol differential detection. EXIT-chart-aided designs are used for creating near-capacity solutions and future research directions as well as open problems are stated.

Lajos Hanzo (http://www-mobile.ecs.soton.ac.uk) FREng, FIEEE, FIET, DSc received his degree in electronics in 1976 and his doctorate in 1983. During his 34-year career in telecommunications he has held various research and academic posts in Hungary, Germany and the UK. Since 1986 he has been with the School of Electronics and Computer Science, University of Southampton, UK, where he holds the chair in telecommunications. He has co-authored 19 books on mobile radio communications totaling in excess of 10 000, published 690 research papers ay IEEE Xplore, acted as TPC Chair of IEEE conferences, presented keynote lectures and been awarded a number of distinctions. Currently he is directing an academic research team, working on a range of research projects in the field of wireless multimedia communications sponsored by industry, the Engineering and Physical Sciences Research Council (EPSRC) UK, the European IST Programme and the Mobile Virtual Centre of Excellence (VCE), UK. He is an enthusiastic supporter of industrial and academic liaison and he offers a range of industrial courses. He is also an IEEE Distinguished Lecturer as well as a Governor of both the IEEE ComSoc and the VTS. He is the acting Editor-in-Chief of the IEEE Press. For further information on research in

progress and associated publications please refer to http://www-mobile.ecs.soton.ac.uk

T2: Game Theory for Analysis and Optimization of Vehicular Networks
Dusit Niyato, Nanyang Technological University

Vehicular networks can be used to support various safety-related and non-safety-related intelligent transportation system (ITS) applications. Vehicular networks in the forms of vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) communications use advanced wireless technologies to transfer data to meet the demand and requirement of ITS applications. Since the entities (e.g., vehicular users) in vehicular networks have rational and self-interest behavior, they will maximize their own benefits which could conflict each other. Game theory provides a rich set of mathematical tools to model and analyze conflict situations of protocol optimization and radio resource management in vehicular networks. In this tutorial, an intensive (but friendly) introduction to the various game theory models, their fundamental concepts and properties, and their applications in analyzing and optimizing the performance of protocol and radio resource management in vehicular networks will be provided. At the beginning, brief introduction to ITS applications, the fundamental concepts and core technologies of vehicular networks, and the structure of V2I and V2V communications will be described. Game theory models for road traffic information exchange, bandwidth auction from roadside base station, competitive wireless access for data streaming, transmission rate control in vehicular delay tolerant network, bargaining between vehicles to exchange data chunks in peer-to-peer (P2P) file sharing, cluster formation and coalitional game model for bandwidth sharing will be presented. To this end, the summary of open research issues and directions will be discussed.

Dusit Niyato (M'08) is currently an assistant professor in the Division of Computer Communications, School of Computer Engineering, Nanyang Technological University, Singapore.

His current research interests include design, analysis, and optimization of wireless communication and vehicular networks for ITS applications. He is co-author of the books Dynamic Spectrum Access and Management in Cognitive Radio Networks (Cambridge University Press, 2009) and Game Theory in Wireless and Communication Networks: Theory, Models, and Applications (Cambridge University Press 2011). He is author of the chapter 'Game-Theoretic Models for Vehicular Networks' in the edited book Game Theory for Wireless Communications and Networking (Auerbach Publications, CRC Press). He has published more than 80 papers in leading Journal and Conferences related to protocol design and radio resource management in mobile communication systems. Dr. Dusit serves as an Editor for the Wireless Communications and Mobile Computing (WCMC) and Journal of Communications and Networks (JCN). He is a co-chair of Next Generation

Mobile Networks Symposium, International Wireless Communications and Mobile Computing Conference (IWCMC) 2009 and 2010.

T3: Energy Efficient Networks
Oliver Blume, Alcatel-Lucent Germany and Kostas Pentikousis, Huawei Technologies ERC, Berlin

Information and Communication Technologies (ICT) contribute an increasing share to global energy consumption and greenhouse gas emissions. Previous efforts to improve energy efficiency focused on different network architecture components, aiming in particular at increasing the operational time of battery-powered devices. Today, however, industry and academia are taking a more holistic approach. Green ICT has emerged as an important area in research, development, and deployment of telecommunication networks. This tutorial introduces the latest data on ICT energy consumption and highlights the trends in the corresponding research efforts to reduce it. We will focus on the latest developments in mobile computing and networks, wireless communications, and content distribution and service delivery.

Oliver Blume is working at Alcatel-Lucent Bell Labs in Stuttgart (formerly Alcatel Research & Innovation) as Senior Research Engineer in the Radio System Optimization department. He studied physics at the University of Hamburg (1990) and holds a Dr.-Ing. degree in electrical engineering from the Technical University of Hamburg-Harburg (2000). Oliver has been working in the area of Integrated Optics, optical communication and wireless communication. His current research interests are in multi-radio resource management and in energy efficiency of radio communication systems. Oliver has participated in several EU and national research projects, like Ambient Networks, and ScaleNet. Currently he is involved in the EU-FP7 project EARTH on Energy Efficiency, with manufacturers, operators and leading academia under the consortium lead of Alcatel-Lucent. He has published numerous papers both from Bell-Labs and from cooperative projects and is member of the Alcatel-Lucent Technical Academy (ALTA).

Kostas Pentikousis is a Senior Research Engineer at Huawei Technologies European Research Center in Berlin, Germany. He studied computer science at Aristotle University of Thessaloniki (B.Sc. 1996) and the State University of New York at Stony Brook (M.Sc. 2000, Ph.D. 2004). He has been involved in several contract and joint research projects, including the EU-funded Ambient Networks, PHOENIX, WEIRD, and 4WARD, and the Future Internet program of the Finnish Strategic Centre for Science, Technology and Innovation in the field of ICT (TIVIT). Dr. Pentikousis has published more than seventy academic papers and book chapters in areas such as network architecture and design, mobile computing, applications and services, local and wide-area networks, and energy efficient networking. He presented several tutorials on these topics, most recently at the Future Internet Summer School (FISS) at the University of Bremen and the Sixth

IEEE International Symposium on Wireless Communication Systems (ISWCS). He is currently working on information-centric networking concepts and systems and is particularly interested in energy-efficient future Internet architectures designed for mobility and multiaccess.

T4: Inter-Vehicular Communications: Protocols and Simulation Techniques
Falko Dressler, University of Erlangen

Much progress can be observed in the domain of Inter-Vehicular Communication, looking back at the last decade. It can be seen that studies of IVC protocols in the context of Vehicular Ad Hoc Networks (VANETs) are typically based on simulation models. This approach has two major prerequisites: First, detailed network simulation of all layers of communication protocols is necessary as provided by a wide variety of tools by the networking community. Secondly, realistic simulation of vehicles' mobility, i.e., an exact modeling of road traffic, is needed to estimate positions and movements of involved components. The objectives of this tutorial are twofold: In the first part, an introduction to recent developments in the field of IVC protocols and the used methods is provides. In the second part, we investigate the evolution of mobility modeling in VANET simulations and how recent advances in bidirectional coupling of road traffic microsimulation and network simulation lead to more realistic results at comparably low computational cost. The tutorial aims to provide insights into relevant methods and protocols in the IVC domain and on how adequate performance studies have to be conducted.

Falko Dressler is an assistant professor leading the Autonomic Networking Group at the Department of Computer Sciences, University of Erlangen. He teaches on self-organizing sensor and actor networks, network security, and communication systems. Dr. Dressler received his M.Sc. and Ph.D. degree from the Dept. of Computer Sciences, University of Erlangen in 1998 and 2003, respectively. In 2003, he joined the Computer Networks and Internet group at the Wilhelm-Schickard-Institute for Computer Science, University of Tuebingen. Since 2004, he is with the Computer Networks and Communication Systems group at the Department of Computer Sciences, University of Erlangen.

Dr. Dressler is an Editor for journals such as Elsevier Ad Hoc Networks and ACM/Springer Wireless Networks (WINET). He was guest editor of special issues on self-organization, autonomic networking, and bio-inspired computing and communication for IEEE Journal on Selected Areas in Communications (JSAC), Elsevier Ad Hoc Networks, and Springer Transactions on Computational Systems Biology (TCSB). Besides chairing a number of workshops associated to high-level conferences, he regularly acts in the TPC of leading networking conferences such as IEEE INFOCOM, IEEE ICC, IEEE Globecom, IEEE MASS, IFIP Networking and others. Dr. Dressler published two books including Self-Organization in Sensor and Actor Networks, published by Wiley in 2007.

Dr. Dressler is Senior Member of the IEEE (Communications Society, Computer Society, Vehicular Technology Society), member of ACM (SIGMOBILE) and GI (KuVS, Real-time). He is actively participating in several working groups of the IETF. His research activities are focused on self-organizing networks addressing issues in wireless ad hoc and sensor networks, inter-vehicular communication systems, bio-inspired networking, and adaptive network security techniques.

Reviewers (Continued from Page 11)

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Guanding Yu
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Lan Yuanrong
Yuanzhu
Chau Yuen
Barış Yüksekkaya
Ji Hoon Yun
Xiang Yun
Gheorghe Zaharia
Rostom Zakaria
Randa Zakhour
Ahmed Zaki
Alberto Zanella
Andrea Zanella
Renato Zanetti
Charilaos Zarakovitis
Dimitra Zarbouti
Brad W Zarikoff
Thomas Zasowski
Georg Zeitler
Erlin Zeng
Hui Zeng
Jingdi Zeng
Kai Zeng
Liaoyuan Zeng
Wei Zeng
Hans-Jürgen Zepernick
Cemin Zhang
Chao Zhang
Chao Zhang
Charlie Zhang
Haibin Zhang
Hong Zhang
Hong Zhang
J Zhang
Jian Zhang
Jiankang Zhang

Jianmin Zhang
Jiayi Zhang
Jie Zhang
Jing Zhang
Jingtao Zhang
Jun Zhang
Li Jun Zhang
JW Zhang
Lei Zhang
Li Zhang
Liang Zhang
Liqing Zhang
Xian Min Zhang
Mingyang Zhang
Peng Zhang
Q.T. Zhang
Qinqing Zhang
Qiyun Zhang
Rui Zhang
Ruonan Zhang
Sheng Zhang
Shengli Zhang
Shunqing Zhang
Tiankui Zhang
Wen Zhang
Wenhui Zhang
Wensheng Zhang
Xiang Zhang
Xin Zhang
Yan Zhang
Yi Zhang
Yonghong Zhang
Yu Zhang
Yuantao Zhang
Yuanyuan Zhang
Zhongshan Zhang
Zhongwei Zhang
Chunming Zhao
Dongmei Zhao
Hong Zhao
Jian Zhao
Junhui Zhao
Minjian Zhao
Pengkai Zhao
Rui Zhao
Yanxiao Zhao
Youping Zhao
Song Zhenfeng
Fu-Chun Zheng
Gan Zheng
Guanbo Zheng
Harold Zheng
Kan Zheng
Kan Zheng
Liming Zheng
Pan Zhengang
Lin Zhiwei
Chongxian Zhong
Lei Zhong
Biao Zhou
Bo Zhou
Dengpan Zhou
Guoqing Zhou
Hongmei Zhou
Hua Zhou
Juejia Zhou
Nan Zhou
Tian Zhou
Xiangwei Zhou
Xiangyun Zhou
Xianjun Zhou
Xin Zhou
Yifeng Zhou
Yiqing Zhou
Yuan Zhou
Zhigang Zhou
Cheng Zhu
Chenxi Zhu
H. Zhu
Jianchi Zhu
Li Zhu
Lidong Zhu
Meifang Zhu
Yuan Zhu
Zhiwen Zhu
Milan Zivkovic
Francesco Zorzi
Zoran Zvonar
Thomas Zwick
Piotr Zwierzykowski
Lukasz Zwirello

3rd IEEE International Symposium on
Wireless Vehicular Communications

Final Program

16 – 17 May 2010

Grand Hotel

Taipei, Taiwan

Welcome from the General Co-Chairs

It is our pleasure to welcome attendees to the 3rd IEEE International Symposium on Wireless Vehicular Communications (IEEE WiVeC'2010).

After the successful first and second WiVeC editions in 2007 (Baltimore) and 2008 (Calgary), the third IEEE WiVeC symposium will be co-located with the 71th IEEE Vehicular Technology Conference 2010 Spring conference and will take place at the Grand Hotel in Taipei on the 16th and 17th of May 2010. VTC Fall editions are traditionally located in North America, while VTC Spring is located in other areas of the world. Since WiVeC was originally launched co-located with VTC Fall editions, the IEEE Vehicular Technology Society decided that WiVeC would take place every year and a half in order to ensure that the conference is alternatively co-located with VTC Fall and Spring editions. This resulted in that there was no WiVeC edition in 2009.

The papers to be presented at IEEE WiVeC'2010 cover the full range of wireless vehicular communications: physical layer; protocol design; security and applications and systems. As it has been a tradition since the first WiVeC edition, IEEE WiVeC'2010 will also host a series of wireless vehicular communications demos and invited speakers.

We would like to thank all authors who submitted their work to WiVec, as well as the TPC members and external reviewers for providing timely and high quality reviews. Finally, we would like to take this opportunity to thank the work and dedication of all the organizing and technical committee, and the support from the IEEE Vehicular Technology Society.

We hope you will have a fruitful technical conference while taking the opportunity to enjoy the beauty of Taipei and its surroundings.

Shie-Yuan Wang
Javier Gozálvez
IEEE WiVeC2010 General Co-Chairs

Welcome from the TPC Co-Chairs

Welcome to WiVeC2010 in Taipei! The Technical Program Committee has prepared an exciting program of technical presentations covering the wireless vehicular communication area. We have accepted a total of 21 papers from 68 submitted papers. We will also have 4 demos. Our objective has been to propose a technical program with papers covering the full range of wireless communications in vehicular environment: physical layer area; protocol design area; security area; and applications, systems and experiments area.

We would like to express our gratitude to all authors who submitted their work to IEEE WiVeC 2010 and will, by their presence and expertise, contribute to the success of this third edition of WiVeC. All submitted papers have been thoroughly and independently reviewed in accordance with standard blind reviewing practices. Each of the submitted papers was assigned to at least 3 reviewers.

The review process is a real community effort, and we were very fortunate to have a dedicated group of people, from local and international experts, serving as the technical program committee members who spent their valuable time in providing reviews and drafting the external reviews. In total we had 41 TPC members, and the majority of review tasks had been conducted directly by TPC members and executive committee members. We would therefore like to thank the TPC members and the additional external reviewers for having provided timely and high quality reviews to complete this enormous task.

We would like to thank Shie-Yuan Wang and Javier Gozalvez for their excellent work as WiVeC general co-chairs, the Demo Chair, Giovanni Pau, for his effort in attracting exciting demos, and last but not least, James Irvine for his invaluable advices and help.

We hope that you will find the program and presentations exciting and thought-provoking, and look forward to your company in this very exciting WiVec 2010 to be held for the first time in Asia. We hope that you enjoy the conference and your visit to Taipei and its surroundings.

Jérôme Härri and Daniel Jiang
IEEE WiVeC TPC Co-Chairs

Plenary

WiVeC Opening Plenary
T.C. Chiang, Director, Telematics and Control System Division, ITRI

Dr. T.C. Chiang is the Division Director of the Telematics and Control System Division in the Information and Communications Research Laboratories (ICL) of Industrial Technology Research Institute (ITRI), Taiwan. His division is responsible for the evolution of Telematics, EV control platform, and ITS related applications and services, focusing on communication and infotainment technology for Telematics service creation, implementation, delivery, operation and maintenance. Dr. Chiang is also currently in charge of NextGen Telematics project in ITRI since 2008.

Prior to his present job in ITRI, Dr. Chiang was in an architecture team for Lucent's Bell Labs, INU and Global Professional Service organizations in Naperville, USA, participating in numerous forums, including industry Conferences and standards meetings, leading the evolution planning for Lucent's INU product into the packet and mobile technology areas.

Dr. Chiang holds a MS degree in electrical engineering and a PhD degree in computer science in Illinois Institute of Technology at Chicago, Illinois, USA. He is also an adjunct professor giving the lecture for Vehicular Networks and Communications in National Chiao Tung University, Hsinchu City, Taiwan, since 2008.

Sadayuki Tsugawa, Professor, Department of Information Engineering, Meijo University, Japan

Dr. Sadayuki Tsugawa is a Professor of Information Engineering at Meijo University. He received his B. E. degree, M. E. degree, and Doctor of Engineering degree in 1968, 1970, and 1973, respectively in instrumentation and control engineering all from the University of Tokyo. In 1973, he joined the Mechanical Engineering laboratory under Japanese Ministry of International Trade and Industry (MITI). He also was a Professor of Graduate School at University of Tsukuba from 1993 to 2003. In 2003 he resigned the laboratory and moved to Meijo University.

In 1970's he was involved with two ITS projects in the laboratory: a dynamic route guidance system and a vision-based intelligent vehicle. The dynamic route guidance system, named Comprehensive Automobile Traffic Control System (CACS) and sponsored by MITI, was the first one in the world that was installed in an urban area (downtown of Tokyo), although experimentally, and was experimented for one year. The vision-based intelligent vehicle was also the first one in the world that autonomously drove on a test track. Since then, he has been conducting research on ITS,

and, in particular, on Advanced Vehicle Control and Safety Systems (AVCSS), including driver assistance systems and automated driving systems. His current interests are in energy saving and global warming prevention with ITS technologies including automated vehicles as well as vehicle safety communications (VSC) based on inter-vehicle communications.

He has served as general chair and program chair in many international and domestic conferences and symposia sponsored by IEEE ITS Society, IFAC Transportation Committee, and other domestic academic societies. He is a BOG member of IEEE ITS Society since 2008. Since 2008 he has been serving as project leader of Japanese national project named "Energy ITS" sponsored by Japanese Ministry of Economy, Trade and Industry, which is focusing on CO_2 emission reduction from automobile transportation and global warming prevention. The main theme of the project is an automated heavy truck platoon.

He was awarded the best paper prize by the Japanese Society of Instrument and Control Engineers in 1991, and by the Minister of Science and Technology for the research on ITS and AVCSS in 1999.

Panel Session

Evaluation Methodologies and Standards of Vehicular Networks

Panelists:

Seii Sai	*Toyota InfoTechnology Center, Co., Ltd*
Hyun Seo Oh	*ETRI*
Falko Dressler	*University of Erlangen*
Michael Li	*ITRI*
Hagen Stübing	*Adam Opel GmbH*

Recent developments in the automotive industry have aimed at better driving safety, traffic efficiency, and providing information to vehicle users. Many applications to be supported by vehicular networks exhibit unique characteristics such as highly dynamic and localized context. Vehicular networks should be designed to be flexible, robust, and resilient to support diverse applications, handle dynamic fluctuations, and evolve over deployment stages. While there have been many activities to develop and demonstrate applications based on vehicular networking technologies, the evaluation and field testing aspects have often been small-scale and hard to replicate. There exists urgent needs for methodologies and standards that enable evaluations and tests under realistic settings, and equally important, provide

reference framework to compare and contrast results from various studies. Such evaluation methodologies and standards can provide valuable insights to characterize and validate realistic behaviors of applications and vehicular networks. This panel will address the needs and challenges, recent status and results in this subject area.

Seii Sai received a Bachelor's degree in electronic engineering and a Master's degree in information and communication engineering from the University of Tokyo in 1999 and 2001, respectively. He joined Toyota InfoTechnology Center, Co., Ltd. in 2001 and worked as a research engineer for the architecture design and prototype development of wireless vehicular networks using mobile IP and group-based communication methods. Since 2005, he has been a project leader on the development of inter-vehicle communications system using UHF band for safety applications. His research interests include ITS system architecture, vehicle-to-vehicle communication methods, and routing protocols.

Hyun Seo Oh is a team leader of the vehicle networking research team at ETRI in Korea, and is leading national projects such as VMC (Vehicle Multi-hop Communication) and Smart Highway in Korea.

Dr. Hyun Seo Oh received the B.S. degree in Electronic Engineering from Soongsil University in 1982, the M.S. degree in Electronic Engineering from Yonsei University in 1985, and the Ph. D. in Electronic Engineering from Yonsei University in 1998. He has also been a visiting researcher in Ohio State University (OSU) in USA. He joined the research staff of ETRI in 1982. Then, he worked on the system engineering of digital switching system and secure communication system which has block ciphering and stream ciphering. He also developed cellular systems such as IS-95, PCS and IMT-2000 system. He then joined the ITS (Intelligent Transport Systems) project to develop 5.8 GHz DSRC packet communication system for ETC, and the smart antenna project to develop adaptive antenna techniques for WCDMA cellular system and TDD-CDMA. Recently, he is leading Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) communication technology for vehicle safety and future ITS applications. He has been a committee member of Korea ITS society, and invited editor in IEEE vehicular communication society. He has published more than 100 journal papers and patents in the vehicular communications area.

Falko Dressler is an assistant professor leading the Autonomic Networking Group at the Department of Computer Science, University of Erlangen. He teaches on self-organizing sensor and actor networks, network security, and communication systems. Dr. Dressler received his M.Sc. and Ph.D. degree from the Dept. of Computer Science, University of Erlangen in 1998 and 2003, respectively.

Dr. Dressler is an Editor for journals such as Elsevier Ad Hoc Networks and ACM/Springer Wireless Networks (WINET). He was guest editor of special issues on self-organization, autonomic networking, and bio-inspired computing and communication for IEEE Journal on Selected Areas in Communications (JSAC), Elsevier Ad Hoc Networks, and Springer Transactions on Computational Systems Biology (TCSB). Besides chairing a number of conferences and workshops, he regularly acts in the TPC of leading networking conferences such as IEEE INFOCOM, IEEE ICC, IEEE Globecom, IEEE MASS, and others. Dr. Dressler published two books including Self-Organization in Sensor and Actor Networks, published by Wiley in 2007.

Dr. Dressler is a Senior Member of the IEEE (Communications Society, Computer Society, Vehicular Technology Society) as well as a Senior Member of ACM (SIGMOBILE), and member of GI (KuVS, Real-time). He is actively participating in several working groups of the IETF. His research activities are focused on self-organizing networks addressing issues in wireless ad hoc and sensor networks, inter-vehicular communication systems, bio-inspired networking, and adaptive network security techniques. bio-inspired networking, and adaptive network security techniques.

Michael Li received a bachelor's degree in Science and a Master's degree in Engineering from National Tsing Hua University. Mr. Li currently works as a department manager at Industrial Technology Research Institute in Taiwan, a government funded research organization with a mission to help technology advancement of Taiwan companies. Mr. Li's current project just created Taiwan's first IEEE 802.11p and IEEE 1609 compliant WAVE/DSRC unit, a wireless communication device for vehicle to vehicle, or vehicle to infrastructure communication. Mr. Li is also involved in IEEE 802.11p and IEEE 1609 standardization activities, as well as other WAVE/DSRC related joint research projects with National Chiao Tung University.

Hagen Stübing is a research engineer in the Advanced Engineering Active Safety Department at the Adam Opel GmbH. He has been working for Opel on a number of national and international car-to-x projects. Within these activities he is heavily involved in the development of the simTD system architecture, a large field operational test (FOT) in Germany. He has further contributed to security and privacy solutions for simTD as well as for Pre-Drive C2X, a European funded FOT. Currently he is working inside the Car-to-Car Communication Consortium together with the standardization organizations ETSI TC ITS, to achieve a common European standard for ITS security.

Prior to joining Opel, he was studying Electrical Engineering at the Technische Universität Darmstadt, Germany with emphasis on embedded system design. In 2004 he joined a double degree program with the Universitat Politècnica de Catalunya in Barcelona, Spain from where he received his Masters Degree in Information and Communication Technologies in 2006. He completed his Masters Degree in Electrical Engineering (Dipl.-Ing.) in 2008. Since July 2008 he is doing his PhD at Adam Opel GmbH in the field of vehicular ad hoc networks. In particular his research interests are MAC layer protection techniques for security and privacy issues as well as car-to-X architectures in general.

VTC Opening Plenary

WiVeC attendees are invited to the VTC2010-Spring opening plenary on Monday, 17 May, from 8.30 – 10.30 in the Grand Ballroom. Full details can be found on Page 12.

WiVeC Technical Sessions

W1: Antennas, Wireless Channel and Physical Layer
Chair: Angela Doufexi, University of Bristol

1. **An Empirical Doubly-Selective Dual-Polarization Vehicular MIMO Channel Model**
   Guillermo Acosta-Marum, Brett T. Walkenhorst and Robert J. Baxley, Georgia Tech Research Institute

2. **A Modulation Dependent Channel Coherence Metric for VANET Simulation Using IEEE 802.11p**
   Jared Dulmage, Michael P. Fitz and Danijela Cabric, UCLA

3. **On the Statistical Analysis of the Channel Capacity of Double Rayleigh Channels with Equal Gain Combining in V2V Communication Systems**
   Batool Talha and Matthias Pätzold, University of Agder

4. **Mobile WiMAX: Impact of Mobility on the Performance of Limited Feedback Linear Precoding**
   Mai Tran, Andrew Nix and Angela Doufexi, Bristol University

5. **An Empirical Study of RF Link for Wireless Automotive Passive Entry System**
   Mohamed Cheikh, Sébastien Kessler, Continental Automotive France; Jean-Guy Tartarin, University de Toulouse; Alexis Morin, Continental Automotive France; Jacques David, University de Toulouse

6. **Coverage Area Prediction Method of Extremely Reliable In-Car MB-OFDM UWB Communication**
   Ryouhei Kaneko, Akihiro Yamakita and Fumiaki Maehara, Waseda University

W2: Protocol and MAC Layer
Chair: Falko Dressler, University of Erlangen

1. **Evaluation of Multi-Channel Schemes for Vehicular Safety Communications**
   Kezhu Hong, John B. Kenney, Vinuth Rai, Toyota InfoTechnology Center; Kenneth P. Laberteaux, Toyota Research Institute- North America

2. **Impact of Using Multi-Packet Reception on Performance in Delay Tolerant Networks**
   Feng Gu, The University of New Mexico; Xu Li, State University of New York at Buffalo; Min-You Wu, Shanghai Jiao Tong University; Wei Shu, The University of New Mexico

3. **Channel Allocation in a Multiple Distributed Vehicular Users Using Game Theory**
   Yusita Kasdani, National University of Singapore; Yong Huat Chew, Chau Yuen, Institute for Infocomm Research; Woon Hau Chin, Toshiba Research Europe Limited

4. **Reliable Broadcasting for Active Safety Applications in Vehicular Highway Networks**
   Martin Koubek, Susan Rea and Dirk Pesch, Cork Institute of Technology

5. **Spatial Diversity for IEEE 802.11p Post-Crash Message Dissemination in a Highway Environment**
   Nor Fadzilah Abdullah, Angela Doufexi and Robert J. Piechocki, University of Bristol

W3: Security and Privacy
Chair: Jérôme Härri, Karlsruhe Institute of Technology

1. **A Simple Privacy Preserving Route Tracing Mechanism for VANET**
   Sangjin Kim, Korea University of Technology and Education; Heekuck Oh, Hanyang University

2. **An Elliptic Curve Distributed Key Management for Mobile Ad Hoc Networks**
   Hisham Dahshan and James Irvine, University of Strathclyde

3. **Enhancing Security and Privacy in C2X Communication by, Radiation Pattern Control**
   Hagen Stübing, Adam Opel GmbH; Abdulhadi Shoufan, Sorin A. Huss, Technische Universität Darmstadt

4. **Safe Distance Based Location Privacy in Vehicular Networks**
   Yu-Chih Wei and Yi-Ming Chen, National Central University

5. **BSS: A Distributed Top-k Processing in Mobile BusNet for Security Surveillance**
   Xu Li, State University of New York at Buffalo; Jiajun Hu, Shanghai Jiao Tong University; Hongyu Huang, Chongqing University; Jialiang Lu, Shanghai Jiao Tong University; Wei Shu, The University of New Mexico; Minglu Li and Min-You Wu, Shanghai Jiao Tong University

W4: Applications, System and Experients
Chair: Vinuth Rai, Toyota InfoTechnology Cente

1. **Trace-Based Evaluation of Rate Adaptation Schemes in Vehicular Environments**
   Kevin C. Lee, Juan M. Navarro, Tin Y. Chong, Uichin Lee and Mario Gerla, UCLA

2. **Comfort Applications in Vehicular Ad Hoc Networks Based on Fountain Coding**
   Saleh Yousefi, Urmia University; Tijani Chahed, Institut TELECOM; Seyed Masoud Mousavi Langari, Kaywan Zayer, Urmia University

3. **Improving Safety for Driverless City Vehicles: Real-Time Communication and Decision Making**
   Andrei Furda, Griffith University; Laurent Bouraoui, Michel Parent, Institut National de Recherche en Informatique et et Automatique (INRIA); Ljubo Vlacic, Griffith University

4. **iTETRIS: Adaptation of ITS Technologies for Large Scale Integrated Simulation**
   Vineet Kumar, Lan Lin, Hitachi Europe SAS; Daniel Krajzewicz, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR); Fatma Hrizi, EURECOM; Oscar Martinez, Javier Gozalvez and Ramon Bauza, University Miguel Hernandez (UMH)

5. **Efficient Time Diversity Evaluation for Direct Tire Pressure Monitoring System**
   Jean-Guy Tartarin, University de Toulouse; Mohamed Cheikh, Sébastien Kessler, Alexis Morin, Continental Automotive France; Jacques David, University de Toulouse

Demos

1. **NCTUns 6.0: A Simulator for Advanced Wireless Vehicular Network Research**
   Shie-Yuan Wang, Chih-Che Lin, National Chiao Tung University

2. **A Demonstrator for Beamforming in C2X Communication**
   Hagen Stübing, Adam Opel GmbH; Abdulhadi Shoufan, Sorin A. Huss, Technische Universität Darmstadt

3. **ITRI WAVE/DSRC Communication Unit**
   Hsia-Hsin Li and Kang-Chiao Lin, Industrial Technology Research Institute

4. **DEMO: Simulation-as-a-Service for ITS Applications**
   Jérôme Härri, Moritz Killat, Tessa Tielert, Jens Mittag, Hannes Hartenstein, Karlsruhe Institute of Technology (KIT)