

# VTC2006-Spring Technical Sessions

## Monday, 8 May 2006

Monday 8 May 10:40 - 12:20 Kensington

### 1A: Future Wireless PHY/MAC 1

Chair: Xiaoming Fu, University of Goettingen, Germany

- 1. Minimum Energy Cooperative Path Routing in Wireless Networks: An Integer Programming Formulation**  
Fulu Li, Andrew Lippman, MIT; Kui Wu, University of Victoria
- 2. A New Power-Saving mechanism for WLAN Broadcast/Multicast services**  
Hyu-dae Kim, Dong-Ho Cho, KAIST
- 3. Adaptive MBER Space-Time DFE Assisted Multiuser Detection for SDMA Systems**  
Sheng Chen, Andy Livingstone, Lajos Hanzo, University of Southampton
- 4. Iterative Soft Interference Cancellation Aided Minimum Bit Error Rate Uplink Receiver Beamforming**  
Shuang Tan, Lei Xu, Sheng Chen, Lajos Hanzo, University of Southampton
- 5. Serially Concatenated Luby Transform Coding and Bit-Interleaved Coded Modulation Using Iterative Decoding for the Wireless Internet**  
Ronald Tee, T.D. Nguyen, Lie-Liang Yang, Lajos Hanzo, University of Southampton
- 5. Performance Analysis of the Real-time Capabilities of Coordinated Centralized Scheduling in 802.16 Mesh Mode**  
Christian Schwingenschloegl, Siemens Corporate Technology; Volker Dastis, Technische Universität Darmstadt; Parag S. Mogre, Matthias Hollick, Ralf Steinmetz, Technische Universität Darmstadt, Multimedia Communications Lab (KOM)

Monday 8 May 10:40 - 12:20 Bristol

### 1B: Ad-hoc Networks 1: MAC Protocols

Chair: G.S. Kuo, NCCU, Taiwan

- 1. Proposition of a Full Deterministic Medium Access Method for Wireless Network in a Robotic Application**  
Adrien van den Bossche, Thierry Val, Eric Campo, University of Toulouse II
- 2. Jointly Optimal Congestion and Medium Access Control in Ad Hoc Wireless Networks**  
Jang-Won Lee, Yonsei University; Mung Chiang, A. Robert Calderbank, Princeton University
- 3. Ripple: A Distributed Medium Access Protocol for Multi-hop Wireless Mesh Networks**  
Ray-Guang Cheng, Cun-Yi Wang, Li-Hung Liao, National Taiwan University of Science and Technology
- 4. TA-MAC: Task Aware MAC Protocol for Wireless Sensor Networks**  
Sangheon Pack, University of Waterloo; Jaeyoung Choi, Taekyoung Kwon, Yanghee Choi, Seoul National University
- 5. A Location and Mobility Aware Medium Access Control Protocol for Directional Antenna-Based Mobile Ad Hoc Networks**  
Kai-Ten Feng, Chih-Ti Lu, National Chiao Tung University

### 6. Intelligent Router-Assisted Power Saving Medium Access Control for Mobile Ad Hoc Networks

Kai-Ten Feng, Kuan-Hung Chou, National Chiao Tung University

Monday 8 May 10:40 - 12:20 Grosvenor

### 1C: Scheduling & Resource Allocation

Chair: Mischa Dohler, France Telecom

- 1. Cross-layer Design of Packet Scheduling and Resource Allocation in OFDMA Wireless Multimedia Networks**  
Sang Soo Jeong, Seoul National University; Dong Geun Jeong, Hankuk University of Foreign Studies; Wha Sook Jeon, Seoul National University
- 2. Fairness Based Resource Allocation for Multi-User MIMO-OFDM Systems**  
Paul Morris, Chandranath Athaudage, University of Melbourne
- 3. Resource Allocation in OFDM based Multihop Wireless Networks**  
Jing Shi, Guanding Yu, Zhaoyang Zhang, Peiliang Qiu, Zhejiang University
- 4. Advanced Resource Reservation using PAR-SIP for Real-time Multimedia Communication**  
Woosong Kim, LG Electronics.; Hongseok Jeon, Electronics and Telecommunications Research Institute
- 5. Scheduling Approach for MIMO with Tomlinson-Harashima Precoding**  
Battal Ozdemir, Ozgur Gurbuz, Sabanci University
- 6. Frequency Domain Channel-Dependent Scheduling Employing an Adaptive Transmission Bandwidth of Pilot Channel in Uplink Single-Carrier -FDMA Radio Access**  
Yoshiaki Ofuji, Kenichi Higuchi, Mamoru Sawahashi, NTT DoCoMo, Inc.

Monday 8 May 10:40 - 12:20 Connaught

### 1D: Coding/Decoding

Chair: Gerhard Bauch, DoCoMo Euro-Labs, Germany

- 1. Iterative Modified QRM-MLD Based on CRC Check for OFDM MIMO Multiplexing**  
Koichi Adachi, Masao Nakagawa, Keio University
- 2. Practical Interleavers for Systematic Repeat-Accumulate Codes**  
Sarah Johnson, Steven Weller, University of Newcastle
- 3. Concatenated LDGM Codes with Reduced Decoder Complexity**  
Joon-Sung Kim, Hong-Yeop Song, Yonsei University
- 4. Improved Code Shortening for Block and Product Codes**  
Kai Ching Lim, Nanyang Technological University of Singapore; Yongliang Guan, Nanyang Technological University
- 5. Reduced-Complexity Convolutional Self-Doubly Orthogonal Codes for Efficient Iterative Decoding**  
Christian Cardinal, École Polytechnique de Montréal; David Haccoun, Polytechnique Montréal; Yu-Cheng He, École Polytechnique de Montréal

- 6. A New Scheme to Reduce Complexity of APP Decoders working on the Dual Code**  
Sudharshan Srinivasan, University of South Australia; Steven Pietrobon, Small World Communications

Monday 8 May 10:40 - 12:20 Mayfair 1

**1E: MIMO 1**

Chair: Alister Burr, University of York, UK

- 1. Precoder Design for MIMO Systems with Transmit Antenna Correlations**  
Winston W. L. Ho, Ying-Chang Liang, Institute for Infocomm Research
- 2. Switching Between OSTBC and Spatial Multiplexing with Linear Receivers in Spatially Correlated MIMO Channels**  
Antonio Forenza, UT Austin; Matthew R. McKay, University of Sydney, Australia; Iain B. Collings, CSIRO; Robert Heath, University of Texas
- 3. Multi-mode Precoding for Correlated MIMO Channels with Minimum BER Selection Criterion**  
Jinxia Cheng, Shidong Zhou, Yan Yao, Tsinghua University
- 4. Transmit Precoding for the Multiple Antenna Broadcast Channel**  
Sandeep Bhadra, Manish Airy, Robert Heath, Sanjay Shakkottai, University of Texas at Austin
- 5. Receiver Structures for MIMO-SC/FDE Systems**  
Steffen Reinhardt, Tufik Buzid, Mario Huemer, University of Erlangen-Nuremberg
- 6. Performance of the EP-MBCJR Algorithm in Time Dispersive MIMO Office Environments**  
Cheran M. Vithanage, Christophe Andrieu, Robert J. Piechocki, University of Bristol; Justin Coon, Toshiba Research Europe Ltd.

Monday 8 May 10:40 - 12:20 Mayfair 2

**1F: OFDM**

Chair: Chandranath Athaudage, University of Melbourne, Australia

- 1. Cancellation of ICI by Doppler Effect in OFDM Systems**  
Kapseok Chang, Electronics and Telecommunications Research Institute; Youngnam Han, Jeongseok Ha, Information and Communications University; Younghoon Kim, Electronics and Telecommunications Research Institute
- 2. Heuristic Algorithms to Adaptive Subcarrier-and-Bit Allocation in Multiclass Multiuser OFDM Systems**  
Kainan Zhou, Institute for Infocomm Research & National University of Singapore; Yong Huat Chew, Institute for Infocomm Research
- 3. On the Calculation of OFDM Error Performance with Phase Noise in AWGN and Fading Channels**  
Himal Suraweera, Xiaolin Zhou, Jean Armstrong, Monash University
- 4. A Comparative Study of Two Receiver Schemes for Interleaved OFDMA Uplink**  
Su Huan, Zhang Jianhua, Zhang Ping, Beijing University of Posts and Telecommunications
- 5. On the Correlation of Subcarriers in Grouped Linear Constellation Precoding OFDM Systems over Frequency Selective Fading**  
Xiaolong Zhu, Alcatel Shanghai Bell Co., Ltd; Jinyin Xue, Peking University

Monday 8 May 10:40 - 12:20 Mayfair 3

**1G: Ultra-Wideband Systems 1**

Chair: Wanzhi Qiu, National ICT Australia

- 1. Impact of UWB Transmitted-Reference Modulation on Linear Equalization of Non-Linear ISI Channels**  
Jac Romme, IMST GmbH; Klaus Witrisal, Graz Technical University
- 2. Analysis of NB BPSK in MB-OFDM UWB Interference and Fading**  
Amir Nasri, Robert Schober, Lutz Lampe, University of British Columbia
- 3. UWB Ranging and Crystal Offset**  
Bin Zhen, Huan-Bang Li, NiCT; Ryuji Kohno, Yokohama National University
- 4. Dimension Diversity for the Enhancement of UWB Signal Detection**  
Q.T. Zhang, S. H. Song, City University of Hong Kong
- 5. Optimal Pulse Shaping for Pulse Position Modulation UWB Systems with Sparsity-driven Signal Detection**  
Wei Li, Aaron Gulliver, University of Victoria
- 6. Performance Analysis of Pulse Based Ultra-Wideband Systems in the Highly Frequency Selective Fading Channel with Cluster Property**  
Wei-Cheng Liu, Li-Chun Wang, National Chiao Tung University

Monday 8 May 10:40 - 12:20 Lumina

**1H: Antennas**

Chair: Sébastien Roy, Université Laval, Canada

- 1. A UWB Antenna for Impulse Radio**  
Andaya Lestari, Alexander Yarovoy, Delft University of Technology; Eko Rahardjo, University of Indonesia; Leo Ligthart, Delft University of Technology
- 2. Resonant Frequency and Impedance Determination for Backscattered Signals in CSC System**  
Alexandre Tramoni, Claude Tetelin, L2MP/ISEN-TOULON; Alexandre Malherbe, Jerome Conraux, ST Microelectronics
- 3. Transmit Antenna Selection for UHF MIMO**  
Marjan Baghaie Abchuyeh, University of Canterbury; Ian McLoughlin, Tait Electronics Ltd; Philippa A. Martin, University of Canterbury; Kishore Mehrotra, Tait Electronics Ltd.; Desmond P Taylor, University of Canterbury
- 4. Design of a Planar UWB Antenna with Signal Rejection Capability in a Narrow Sub-band**  
Amin M. Abbosh, Marek E Bialkowski, The University of Queensland; Dr. Mohan Jacob, James Cook University; Janina Mazierska, Massey University
- 5. Design of a DTV On-Glass Planar Antenna Based on Fractal Features**  
Chi-Fang Huang, Wu-Shun Wu, Tatung University
- 6. A Planar Dualband Antenna for 2.4 GHz and UWB Laptop Applications**  
Zhi Ning Chen, Institute for Infocomm Research, Singapore; Duixian Liu, Brian Gaucher, T. J. Watson Research Center / IBM

Monday 8 May 10:40 - 12:20 Pre-Function Area

**1P: Transmission Technology Posters 1**

- 1. Improved Belief Propagation (BP) Decoding for LDPC Codes with a Large Number of Short Cycles**  
Kyuhyuk Chung, Dankook University; Jun Heo, Konkuk University

2. **Modified Belief Propagation Decoding Algorithm for Low-Density Parity Check Code Based on Oscillation**  
Satoshi Gounai, Tokyo University of Science; Tomoaki Ohtsuki, Keio University
3. **Adaptive Iterative Turbo Decoding Algorithm**  
Jian Gu, Yi Zhang, Dacheng Yang, Beijing University of Posts and Telecommunications
4. **A Weighting Factor Estimation Scheme for Phase-Control based Peak Power Reduction of Turbo-coded OFDM Signal**  
Osamu Muta, Yoshihiko Akaiwa, Kyushu University
5. **Efficient MMSE-Based Space-Time Turbo Equalization in the Presence of Co-Channel Interference**  
Tarik Ait-Idir, INPT; Samir Saoudi, ENST Bretagne
6. **Adaptive Bit-Interleaved Coded OFDM over Time-Varying Channels**  
Jin Soo Choi, Chang Kyung Sung, Sung Hyun Moon, Inkyu Lee, Korea University
7. **New Space-time Trellis Codes for Slow Fading Channels**  
Yi Hong, Albert Guillén i Fàbregas, Institute for Telecom. Research, University of South Australia

8. **A QR-Based Detection Scheme of Orthogonal Space-Time Block Codes for Very Fast Fading Channels**  
Donghun Yu, Jae Hong Lee, Seoul National University
9. **Asymptotic Analysis of Downlink MIMO Multicarrier CDMA systems with a Minimum Mean Square Error Receiver**  
Kyeongyeon Kim, Yonsei University; Sejjoon Shim, The University of Texas at Austin; Jaesang Ham, Chungyong Lee, Yonsei University
10. **Union Bounds for BER Evaluation and Code Optimization of Space-Time codes in 2-by-2 MIMO systems**  
Zhangzhi, S. W. Cheung, Dr. T.I.Yuk, Hoi Kuo, University of Hong Kong
11. **Capacity of Space Time Block Codes with Adaptive Transmission in Correlated Rayleigh Fading Channels**  
Leila Musavian, King's College London; Mohammad Reza Nakhai, Kings College London; Hamid Aghvami, King's College London
12. **On Iterative Frame Synchronization**  
Ayman Abdel-Samad, MIMOS Berhad
13. **Symbol Timing for Multiple-antenna OFDM Systems**  
Tim Schenk, Maurice de Laat, Peter F.M. Smulders, Erik Fledderus, Eindhoven University of Technology

*Monday 8 May 13:50 - 15:30 Kensington*

## **2A: Cooperative Networks' Integration/Interworking**

*Chair: Hsiao-Hwa Chen, National Sun Yat-Sen University, Taiwan*

1. **Coexistence and Interworking of IEEE 802.16 and IEEE 802.11(e)**  
Lars Berlemann, Christian Hoymann, Guido R. Hiertz, RWTH Aachen University; Stefan Mangold, Swisscom Innovations
2. **System Interoperability Solution – Direct Conversion from RF to Baseband Radio Systems**  
Dr. Oleg Panfilov, Ron Hickling, Jae Jung, Tony Turgeon, Michael Yagi, Technoconcepts, Inc.
3. **An Alternative Architecture for WLAN/GPRS Integration**  
Sibaram Khara, College of Engineering and Management, Kolaghat, India; Iti Saha Misra, Jadavpur University; Debashis Saha, IIM Calcutta
4. **WINNER - Towards Ubiquitous Wireless Access**  
Adam Pollard, Vodafone; Martin Döttling, Joern von Haefen, Siemens AG; Daniel Schultz, Ralf Pabst, RWTH Aachen University; Ernesto Zimmermann, Technische Universität Dresden
5. **Towards Service Continuity in Emerging Heterogeneous Mobile Networks**  
Sandro Grech, Henry Haverinen, Vijay Deverapalli, Nokia

*Monday 8 May 13:50 - 15:30 Bristol*

## **2B: Sensor Networks 1**

*Chair: Tad Wysocki, University of Wollongong, Australia*

1. **Impact of Local Decision Rules in Distributed Sensor Networks**  
Nithya Gnanapandithan, Balasubramaniam Natarajan, Kansas State University

2. **Hybrid Approach for Localization in Anisotropic Sensor Networks**  
King-Yip Cheng, King-Shan Lui, Vincent Tam, University of Hong Kong
3. **A Range-Free Localization Algorithm for Wireless Sensor Networks**  
Qiqian Huang, Selvakennedy Selvadurai, University of Sydney
4. **Method of Reducing Search Area for Localization in Sensor Networks**  
Junichi Shirahama, Tokyo University of Science; Tomoaki Ohtsuki, Keio University; Toshinobu Kaneko, Tokyo University of Science
5. **On the Practical Issues in Hop Count Localization of Sensors in a Multihop Network**  
Eddie B.S. Tan, Institute for Infocomm Research; Joo Ghee Lim, University of New South Wales; Winston K. G. Seah, S.V. Rao, Institute for Infocomm Research

*Monday 8 May 13:50 - 15:30 Grosvenor*

## **2C: Traffic Management 1**

*Chair: Moshe Zukerman, University of Melbourne, Australia*

1. **A Novel Framework for Robust WCDMA Planning under Changing Spatial Traffic Distributions**  
Jordi Perez-Romero, Oriol Sallent, Ramon Agustí, Universitat Politècnica de Catalunya (UPC)
2. **Load Sharing in Heterogeneous Wireless Systems Using Dynamic Load Measures**  
Keunyoung Kim, LGE, Seoul, Korea; Youngnam Han, Information and Communications University; JungRyun Lee, KAIST
3. **Active Queue Management in EGPRS**  
Renaud Cuny, Jani Lakkakorpi, Nokia
4. **On the Influence of User Behaviour and Admission Control on System Performance in HS-DSCH**  
Mats Folke, Ulf Bodin, Luleå University of Technology

- 5. Two-Level Fractional Guard Channels for Priority Access in Cellular Systems**  
David Tung Chong Wong, Institute for Infocomm Research; Jon W Mark, University of Waterloo; Kee Chaing Chua, National University of Singapore

*Monday 8 May 13:50 - 15:30 Connaught*

**2D: Recent Advances in Satellite Systems and Networks**

*Chair: P. Takis Mathiopoulos, National Observatory of Athens, Greece*

- 1. Proposal of QAM-OFDM System with IDAR Method for Non-Linear Satellite Channel**  
Pisit Boonsrimuang, Katsuhiro Naito, Kazuo Mori, Mie University; Tawil Paungma, King Mounkut's Institute of Technology of Ladkrabang; Hideo Kobayashi, Mie University
- 2. OFDM Channel Estimation with Timing Offset for Satellite plus Terrestrial Multipath Channels**  
Yeonsu Kang, ETRI; Do-Seob Ahn, Electronics and Telecommunications Research Institute; Ho-Jin Lee, ETRI
- 3. Capacity Enhancement for Integrated HAPS-Terrestrial CDMA System**  
Jeng-Ji Huang, National Taiwan Normal University
- 4. An Efficient Handover Scheme for Multimedia Application Using LEO/MEO Double-layer Satellite Network**  
Chen Bingcai, Zhang Naitong, Nie Boxun, Zhou Tingxian, Harbin Institute of Technology
- 5. PEPsal: a Performance Enhancing Proxy Designed for TCP Satellite Connections**  
Carlo Caini, Rosario Firrincieli, Daniele Lacamera, University of Bologna
- 6. Adaptive GPS Acquisition Technique in Weak Signal Environment**  
Ming-Yu Chuang, Kai-Ten Feng, National Chiao Tung University

*Monday 8 May 13:50 - 15:30 Mayfair 1*

**2E: MIMO 2: OFDM**

*Chair: Robert Heath, University of Texas, USA*

- 1. An Optimized-Hierarchy-Aided Maximum Likelihood Detector for MIMO-OFDM**  
Jos Akhtman, Lajos Hanzo, University of Southampton
- 2. An Efficient Adaptive Power and Bit Allocation Algorithm for MIMO OFDM System Operating in a Multi User Environment**  
Peerapong Uthansakul, Marek E Bialkowski, The University of Queensland
- 3. Multipacket Reception in SIMO-OFDM Systems**  
Chengkang Pan, Yueming Cai, Youyun Xu, Institute of Communications Engineering of PLAUST
- 4. Optimal Training Signals Design for MIMO OFDM Systems with Guard Subcarriers**  
Zi Li, Yueming Cai, Youyun Xu, Institute of Communications Engineering of PLAUST
- 5. Pseudo-Inverse MMSE Based QRD-M Algorithm for MIMO-OFDM**  
Sumei Sun, Institute for Infocomm Research; Yongmei Dai, LeHigh University; Zhongding Lei, Institute for Infocomm Research; Kenichi Higuchi, Hiroyuki Kawai, NTT DoCoMo, Inc.
- 6. Performance Analysis for a Two-Ring Distributed MIMO-OFDM System**  
Xiaolin Zhou, Himal Suraweera, Jean Armstrong, Monash University

*Monday 8 May 13:50 - 15:30 Mayfair 2*

**2F: Channel Estimation 1: OFDM**

*Chair: Tracy Fulghum, Ericsson Inc., USA*

- 1. Chunk-based Channel Estimation for Uplink OFDM**  
Jerome Bonnet, Gunther Auer, DoCoMo Communications Laboratories Europe
- 2. Channel Prediction using Lumpable Finite-State Markov Channels in OFDMA Systems**  
Tommy Kit-Ming Chee, Cheng-Chew Lim, University of Adelaide; Jinho Choi, University of New South Wales
- 3. Time-Domain MMSE Channel Estimation Based on Subspace Tracking for OFDM Systems**  
Xiaolin Hou, Zhan Zhang, Hidetoshi Kayama, DoCoMo Beijing Communications Laboratories Co., Ltd
- 4. Pilot-based Fast Estimation of Frequency Offset and Channel for OFDM**  
Yonghong Zeng, A. Rahim Leyman, Institute for Infocomm Research
- 5. Semi-Blind Channel Estimation Using Superimposed Training Sequences with Constant Magnitude in Dual Domain for OFDM Systems**  
Chih-Peng Li, Wei-Chieh Huang, National Sun Yat-Sen University
- 6. Enhanced DFT Interpolation-Based Channel Estimation for OFDM Systems with Virtual Subcarriers**  
Dong Li, Feng Guo, Guosong Li, Liyu Cai, Alcatel Shanghai Bell

*Monday 8 May 13:50 - 15:30 Mayfair 3*

**2G: Crosslayer Design 1**

*Chair: Mischa Dohler, France Telecom*

- 1. Adaptive Resource Allocation Algorithm with Fairness for MIMO-OFDMA System**  
Jian Xu, Jongkyung Kim, Wonkyu Paik, Jong-Soo Seo, Yonsei University
- 2. Macro Diversity Coding for Broadcast and Multicast Services in a Coded OFDM Cellular System**  
Yun Hee Kim, Sung Kyo Kang, Kyung Hee University
- 3. Resource Allocation and Power Control in a TDD OFDM-based System for 4G Cellular Networks**  
Paola Bisaglia, ST Microelectronics; Silvano Pupolin, Daniele Veronesi, Michele Gobbi, University of Padova
- 4. Coding and Resource Scheduling in Packet Oriented Adaptive TDMA/OFDMA Systems**  
Tommy Svensson, Chalmers University of Technology; Sorour Falahati, Mikael Sternad, Uppsala University
- 5. Cross-Layer Resource Allocation via Geometric Programming in Fading Broadcast Channels**  
Kibeom Seong, Stanford University; Ravi Narasimhan, University of California, Santa Cruz; John M. Cioffi, Stanford University
- 6. Partner Assignment Algorithm for Cooperative Diversity in Mobile Communication Systems**  
Young Seok Jung, J. H. Lee, Seoul National University

*Monday 8 May 13:50 - 15:30 Lumina*

**2H: Propagation 1**

*Chair: Greg Martin, Victoria University, Australia*

- 1. Time-Spatial Path Modeling with Multi-Scattering Attenuation Factors for Wideband Mobile Propagation**  
Teruya Fujii, Japan Telecom

2. **Verification of 3D Ray-tracing with Non-Directional and Directional Measurements in Urban Macrocellular Environments**  
Thomas Fügen, Jürgen Maurer, Thorsten Kayser, Werner Wiesbeck, University of Karlsruhe
3. **Time of Arrival Statistics in Cellular Environments**  
Mohammed T Simsim, Noor M Khan, Rodica Ramer, Predrag Rapajic, University of New South Wales
4. **Channel Estimation for Non-Line-of-Sight WiMax Communication System**  
Jen-Ming Wu, Wen-Bin Lin, National Tsing Hua University
5. **An Adaptive Positioning Scheme Based on Radio Propagation Modeling for Indoor WLANs**  
Chin-Liang Wang, Yih-Shyh Chiou, National Tsing Hua University
6. **Impact of Building Database Accuracy on Predictions with Wave Propagation Models in Urban Scenarios**  
Alexander Aschrafi, University of Stuttgart; Philipp Wertz, University of Stuttgart, Institute of Radio Frequency Technology; Gerd Wölflle, René Wahl, AWE Communications GmbH

Monday 8 May 13:50 - 15:30 Pre-Function Area

## 2P: Mobile Networks Posters 1

1. **An Evolved 3GPP QoS Concept**  
Reiner Ludwig, Hannes Ekström, Per Willars, Ericsson Research; Niklas Lundin, Ericsson R&D
2. **A Practical Mechanism for Vertical Handoff in WLAN/3G Integrated Networks**  
Yu-Ching Hsu, ITRI; Pai-Feng, Tsai, University of NTHU
3. **Increasing Forward Link Performance of 1xEV-DO using Early Terminated Channel Quality Information**  
Patrick Hosein, Huawei Technologies; Rath Vannithamby, Ericsson Inc.
4. **Optimal Traffic-to-Pilot Power Ratio in CDMA Uplink**  
Yi Zhang, Jian Gu, Dacheng Yang, Beijing University of Posts and Telecommunications

5. **Channel State Dependent Packet Discard Policy for 3G Networks**  
Ching-Wan Yuen, OnChing Yue, The Chinese University of Hong Kong
6. **The Effect of F-DPCH on VoIP over HSDPA Capacity**  
Stefan Wänstedt, Mårten Ericson, László Hévízi, Jonas Pettersson, Jozsef Barta, Ericsson Research
7. **Power Headroom Measurements for E-TFC Elimination/Selection in HSUPA**  
Tero Henttonen, Chen Tao, Nokia Research Center
8. **Modelling PTT Packet Delay in the GPRS/GSM Uplink**  
Rebecca Y Wang, RMIT University; Moshe Zukerman, The University of Melbourne; Richard Harris, Massey University
9. **When Do We Need Rate Control for Dedicated Channels in UMTS?**  
Tobias Hossfeld, Andreas Maeder, Dirk Staehle, University of Wuerzburg
10. **An Energy-efficient Contention-based MAC Protocol for Wireless Ad Hoc Networks**  
Kamrok Lee, Wook Hyun Kwon, Seoul National University; Hong Seong Park, Kangwon National University
11. **Adaptive Random Access with Beam-forming in 4G Mobile Networks**  
Matthias Lott, Siemens AG
12. **Routing and Relaying in Wireless Networks: A Throughput Comparison**  
Sedat Gormus, Dritan Kaleshi, Joe McGeehan, Alistair Munro, University of Bristol
13. **Fundamental Analysis of Two-layered Scheduling Algorithm for a Wireless Packet System**  
Sumaru Niida, Takashi Inoue, Yoshio Takeuchi, KDDI R&D Labs. Inc.
14. **Uplink Capacity of VoIP on HSUPA**  
Chen Tao, Markku Kuusela, Esa Malkamaki, Nokia Research Center

Monday 8 May 16:00 - 17:40 Kensington

## 3A: Reconfigurability in Future Systems

Chair: Chenyang Yang, Beihang University, China

1. **Resource Auctioning Mechanisms in Heterogeneous Wireless Access Networks**  
Oriol Sallent, Jordi Perez-Romero, Ramon Agusti, Lorenza Giupponi, Universitat Politecnica de Catalunya; Clemens Kloeck, Ihan Martoyo, Stefan Klett, University of Karlsruhe; Jijun Luo, Siemens AG
2. **Business Models of End-to-End Reconfigurable Systems**  
Didier Bourse, Karim El-Khazen, Al Lee, Dragan Boscovic, Motorola
3. **Equipment Management Strategies in Reconfigurable Networks**  
Vera Stavroulaki, Apostolos Katidiotis, Dionysis Petromanolakis, Panagiotis Demestichas, University of Piraeus
4. **Common Pilot Channel for Network Selection**  
Paul Houze, Sana Ben Jemaa, Pascal Cordier, France Telecom

Monday 8 May 16:00 - 17:40 Bristol

## 3B: CDMA & 3G Networks 1

Chair: Rudolf Mathar, RWTH Aachen, Germany

1. **Overload Control of Best-Effort Traffic in the UTRAN Transport Network**  
Mats Sägfors, Ericsson Research; Vesa Virkki, Oy LM Ericsson Ab; Tarmo Kuningas, Ericsson AB
2. **Low Complex Audio Encoding for Mobile Multimedia**  
Jari Mäkinen, Ari Lakaniemi, Pasi Ojala, Nokia
3. **On the Impact of Repeaters Deployment on WCDMA Networks Planning**  
Mario Garcia-Lozano, Universitat Politecnica de Catalunya
4. **A Novel Algorithm for Radio Access Technology Selection in Heterogeneous B3G networks**  
Jordi Perez-Romero, Oriol Sallent, Ramon Agusti, Universitat Politecnica de Catalunya (UPC); Lin Wang, Hamid Aghvami, King's College London

**5. Network Performance of Node-B Switched Beamforming and Dual Antenna User Equipment in WCDMA**

Mangesh A. Ingale, Aalborg University; Luis Guilherme Uzeda Garcia, Nokia Technology Institute; Klaus Pedersen, Preben E. Mogensen, Nokia Networks

*Monday 8 May 16:00 - 17:40 Grosvenor*

**3C: Handover 1**

*Chair: Chung-Ju Chang, National Chiao Tung University, Taiwan*

- 1. An Approach for Optimal Hierarchical Mobility Management Network Architecture**  
Iti Saha Misra, Jadavpur University; M. Chakrabarty, Netaji Subhash Engineerin College, Calcutta; Debashis Saha, IIM Calcutta
- 2. An Overlay Network Architecture for MPLS-based Micro-mobility with Label Stack Support**  
Chun-Hsin Wang, Chung Hua University
- 3. Performance Evaluation of L2 Handover Mechanisms for Inter-Radio Access Network**  
Nicolas Dailly, Philippe Martins, Philippe Godlewski, ENST - Paris
- 4. Multicast Performance Improvement Strategies based on Autonomous Handover in Wireless Cellular Systems**  
Taesoo Kwon, KAIST; Sunghyun Cho, Sangboh Yun, Samsung Advanced Institute of Technology; Dong-Ho Cho, KAIST
- 5. An Access Point Coordination System for Improved VoIP/WLAN Handover Performance**  
Sai Kit Chui, OnChing Yue, The Chinese University of Hong Kong
- 6. Performance Evaluation of WCDMA-to-CDMA2000 Handover**  
Jae-Hyun Kim, Seong-jin Lee, Ki-Bum Kwon, Seong Keun Oh, University of Ajou; Won-Ik Kim, Peong-Jung Song, ETRI

*Monday 8 May 16:00 - 17:40 Connaught*

**3D: Performance Analysis & Capacity**

*Chair: Jim Cavers, Simon Fraser University, Canada*

- 1. Channel Capacity of BLAST based on the Zero-Forcing Criterion**  
Heunchul Lee, Inkyu Lee, Korea University
- 2. Practicable MIMO Capacity in Ideal Channels**  
Rodney Vaughan, S. Amir Mirtaheeri, Simon Fraser University
- 3. Rate Regions of Asymmetrical Multiple Access with Receive Diversity**  
Thomas Deckert, Sebastian Kaiser, Gerhard Fettweis, Technische Universität Dresden
- 4. New Results on the Performance Evaluation of the Relay Fading Channel**  
Theodoros Tsiftsis, University of Patras; George Karagiannidis, Aristotle University of Thessaloniki; P. Takis Mathiopoulos, ISARS, National Observatory of Athens, Greece
- 5. Mellin Transform Based Performance Analysis of Fast Frequency Hopping Using Product Combining**  
Sohail Ahmed, Lie-Liang Yang, Lajos Hanzo, University of Southampton
- 6. Accurate BER Analysis of QPSK Modulated Asynchronous DS-CDMA Systems Communicating over Rayleigh Channels**  
Xiang Liu, Lajos Hanzo, University of Southampton

*Monday 8 May 16:00 - 17:40 Mayfair 1*

**3E: Diversity Techniques**

*Chair: Matthew McKay, University of Sydney, Australia*

- 1. Performance Based Receive Antenna Selection Algorithm for Layered Space-Time System**  
Di Lu, Daniel K C So, University of Manchester
- 2. Switching Rate and Dwell Time of Hybrid Selection-Maximal Ratio Combining in Rayleigh Fading Channels**  
James K Cavers, Paul Ho, Simon Fraser University
- 3. On the Diversity and Multiplexing Tradeoff for MIMO Links with Imperfect CSIT**  
Albert W.C. Lim, Vincent K.N. Lau, The Hong Kong University of Science and Technology
- 4. MDPSK Diversity Receiver over Rayleigh Fading Channels with Differential Detection and Nonidentical Branch Statistics**  
Hua Fu, Pooi Yuen Kam, National University of Singapore
- 5. Statistical Transmit Antenna Selection for Correlated Rayleigh Fading MIMO Channels**  
Shi Jin, Xiao Li, Xiqi Gao, Southeast University
- 6. Transmit Antenna Shuffling for Quasi-Orthogonal Space-Time Block Codes with Linear Receivers**  
Yu Yi, ENST-Bretagne; Jinhong Yuan, The University of New South Wales

*Monday 8 May 16:00 - 17:40 Mayfair 2*

**3F: Adaptive Modulation**

*Chair: Young-Chai Ko, Korea University*

- 1. Model-based Adaptive Algorithms for Time-Varying Communication Channels with Application to Adaptive Multiuser Detection**  
Zarko B. Krusevac, National ICT Australia and Australian National University; Rodney A. Kennedy, The Australian National University; Predrag B. Rapajic, University of Greenwich at Medway Pembroke
- 2. A New Equivalent SNR Calculation in AMC**  
Zhen Liu, Dacheng Yang, Beijing University of Posts and Telecommunications
- 3. Rate Adaptation in Time Varying Channels using Acknowledgement Feedback**  
Chin Keong Ho, Eindhoven University of Technology; Job Oostveen, Philips Research Laboratories
- 4. Capacity of Rate Adaptive MQAM System in the Presence of Channel Estimation Error under BER constraint**  
Ronghong Mo, National University of Singapore; Yong Huat Chew, Institute for Infocomm Research
- 5. Adaptive Modulation and Diversity Combining Based on Output-Threshold MRC**  
Young-Chai Ko, Korea University; Hong-Chuan Yang, University of Victoria; Mohamed-Slim Alouini, Texas A&M University at Qatar

*Monday 8 May 16:00 - 17:40 Mayfair 3*

**3G: Detection 1: List, Lattice, Sphere**

*Chair: Adriel Kind, Agere Systems Australia*

- 1. A Computationally Efficient Sphere Decoding Algorithm with Smart Radius Control**  
Hee Goo Han, Seong Keun Oh, University of Ajou
- 2. Noncoherent Lattice Decoding of PAM and ASK**  
Daniel Ryan, University of Sydney; Iain B. Collings, CSIRO; Vaughan Clarkson, University of Queensland

3. **Decision Feedback Aided Detection Based on Lattice Reduction in MIMO Systems**  
Xinglin Wang, PingGong, Niu Kai, Weiling Wu, Beijing University of Posts and Telecommunications; Jie Zhang, Siemens Ltd., China; Martin Weckerle, Siemens AG, Communications
4. **List Stack Detection with Reduced Search Space for MIMO Communication Systems**  
Woon Hau Chin, Sumei Sun, Institute for Infocomm Research
5. **List-Sequential (LISS) Multiple-Symbol Detection of Differential Phase Shift Keying**  
Gerhard Bauch, DoCoMo Eurolabs; Christian Kuhn, Munich University of Technology; Prasanna Sethuraman, DoCoMo Euro-Labs

Monday 8 May 16:00 - 17:40 Lumina

### 3H: Antenna Arrays

Chair: Bo Hagerman, Ericsson Research, Sweden

1. **New Calibration Matrix Calculation Method for Removing the Effect of Mutual Coupling for Uniform Linear Arrays**  
Tadatomo Sato, Ryuji Kohno, Yokohama National University
2. **Joint Interference Suppression and Symbol Detection in Slow FH/MFSK Systems with an Antenna Array**  
Ko Chi Chung, ECE Department, Nguyen Le Hung, Huang Lei, National University of Singapore
3. **Design of Non-uniform Circular Phased Arrays using Genetic Algorithms to Reduce the Maximum Side Lobe during Scanning**  
Marco A. Panduro, Aldo L. Méndez, Gerardo Romero, University of Tamaulipas; René F. Domínguez, Electronics Department. University Autonomous of Tamaulipas
4. **A Concatenated Reduced-Rank Receiver Design for MC-CDMA Systems with an Antenna Array**  
Yung-Fang Chen, National Central University
5. **Experimental Antenna Array Calibration with ADaptive LInear Neuron (ADALINE) Network**  
Hugo Bertrand, Dominic Grenier, Sébastien Roy, Université Laval
6. **Performance Analysis of Optimum Combining in Spherically Invariant Process Wireless Fading Channels**  
Chirasil Chayawan, King Mongkut's University of Technology Thonburi; Sawasd Tantaratana, Sirindhorn International Institute of Technology; Sirichai Hemrungsrote, King Mongkut's University of Technology Thonburi

Monday 8 May 16:00 - 17:40 Pre-Function Area

### 3P: Wireless Access Posters

1. **A MAC Protocol for Coexistence between 20/40 MHz STAs for High Throughput WLAN**  
Yoriko Utsunomiya, Tomoya Tandai, Tomoko Adachi, Masahiro Takagi, Toshiba Corp.

## Tuesday, 9 May 2006

Tuesday 9 May 08:30 - 10:10 Kensington

### 4A: Performance Evaluation for Future Wireless Systems

Chair: Jiangzhou Wang, University of Kent, UK

1. **Idle Period Shortening for TDD Communications in Large Cells**  
David Mottier, Loïc Brunel, Mitsubishi Electric ITE-TCL

2. **Performance Analysis of Sleep Mode Operation in IEEE 802.16e Mobile Broadband Wireless Access Systems**  
Kwanghun Han, Sunghyun Choi, Seoul National University
3. **Analysis of Spatial Multiplexing for Cross-Layer Design of MIMO Ad-Hoc Networks**  
Marco Levorato, Stefano Tomasin, Paolo Casari, Michele Zorzi, University of Padova
4. **Performance Improvements with a p-Persistent Enhanced DCF for WLANs**  
Jain-Shing Liu, Providence University; Chun-Hung Richard Lin, National Sun Yat-Sen University
5. **A Novel Resource Allocation Algorithm for Real-time Services in Multiuser OFDM Systems**  
Guanding Yu, Zhaoyang Zhang, Yan Chen, Jing Shi, Peiliang Qiu, Zhejiang University
6. **A Collision Free MAC Protocol for Energy Saving in Wireless Ad Hoc Networks**  
Kaveh Ghaboosi, Babak H. Khalaj, Sharif University of Technology
7. **Performance Improvement of Chip Interleaved Scheme for MB-OFDM System for 480Mbps**  
Xiaoming Peng, Khiam-Boon Png, Francois Chin, Institute for Infocomm Research
8. **Coverage in WLAN with Minimum Number of Access Points**  
Shahnaz Kouhbor, Julien Ugon, Alex Rubinov, Alex Kruger, Musa Mammadov, University of Ballarat
9. **Toward Formal Verification of 802.11 MAC Protocols: a Case Study of Applying Petri-nets to Modeling the 802.11 PCF**  
Russell J. Haines, Alistair Munro, University of Bristol; Gary Clemo, Toshiba Research Europe Ltd.
10. **Link Adaptation Algorithms over IEEE802.11 WLANs in Collision Prone Channels**  
Alessandro Bazzi, Marco Diolaiti, Gianni Pasolini, IEIIT-BO/CNR (University of Bologna)
11. **IEEE 802.11 DCF Performance Evaluation using One-Dimensional Discrete Time Markov Chains**  
Srikant Kuppa, Shun-Chen Niu, Ravi Prakash, University of Texas at Dallas
12. **Packet Error Rate Analysis of IEEE 802.11b under IEEE 802.15.4 Interference**  
Dae kil Yoon, Soo Young Shin, Wook Hyun Kwon, Seoul National University; Hong Seong Park, Kangwon National University
13. **Design and Implementation of Robust Time/Frequency Offset Tracking Algorithm for MIMO-OFDM Receivers**  
Il-Gu Lee, Heejung Yu, Eunyoung Choi, Sok-Kyu Lee, Electronics and Telecommunications Research Institute

2. **Frequency-Domain Residual Interference Cancellation in Cyclic Prefix Assisted Single-carrier Communications**  
Li Wei, Southeast University
3. **Layer-2 Relays in Cellular Mobile Radio Networks**  
Bernhard Walke, Harianto Wijaya, Daniel Schultz, RWTH Aachen University

4. **Commitment-Aware Reputation System for the Digital Marketplace**  
Alisdair McDiarmid, James Irvine, University of Strathclyde
5. **Radio Resource Allocation in Two-hop Cellular Relaying Network**  
Tao Liu, Mengtian Rong, Ping Li, Shanghai Jiao Tong University; Dan Yu, Yisheng Xue, Siemens Ltd. China; Egon Schulz, Siemens AG
6. **OS-multicast: On-demand Situation-aware Multicasting in Disruption Tolerant Networks**  
Qing Ye, Liang Cheng, Mooi Choo Chuah, Brian D. Davison, Lehigh University

*Tuesday 9 May 08:30 - 10:10 Bristol*

#### **4B: Ad-hoc Networks 2**

*Chair: Maziar Nekovee, BT Research, UK*

1. **Neighbor Discovery with Dynamic Spectrum Access In Adhoc Networks**  
Krishna Balachandran, Joseph H. Kang, Bell Labs, Lucent Technologies
2. **Towards Providing Adaptive Quality of Service in Mobile Ad-Hoc Networks**  
Ronan de Renesse, Vasilis Friderikos, Hamid Aghvami, King's College London
3. **CAT: Contention Aware Transport Protocol for IEEE 802.11 MANETs**  
Kang Yong Lee, Seong-Soon Joo, Jeong-dong Ryoo, Electronics and Telecommunications Research Institute
4. **Analysis of Path Characteristics and Transport Protocol Design in Vehicular Ad Hoc Networks**  
Ralf Schmitz, NEC Deutschland GmbH and University of Mannheim; Alain Leiggene, NEC Europe Ltd., Network Laboratories, Heidelberg; Andreas Festag, NEC Deutschland GmbH; Lars Eggert, NEC Network Laboratories; Wolfgang Effelsberg, University of Mannheim, Computer Science IV, Germany
5. **A Collision Free Multiple Access Scheme based on Sequential Confirmation for Multicast Services in Mobile Ad Hoc Networks**  
Ki-Ho Lee, Dong-Ho Cho, KAIST

*Tuesday 9 May 08:30 - 10:10 Grosvenor*

#### **4C: Network Capacity**

*Chair: Chew Yong Huat, National University of Singapore*

1. **Effects of Simultaneous Circuit and Packet Switched Voice Traffic on Total Capacity**  
Mårten Ericson, Stefan Wänstedt, Jonas Pettersson, Ericsson Research
2. **Analysis of Capacity Improvements in Multi-Radio Wireless Mesh Networks**  
Bassam Aoun, Raouf Boutaba, University of Waterloo; Gary Kenward, Nortel
3. **Uplink Capacity Maximization based on Random Access Channel (RACH) Parameters in WCDMA**  
Sangbum Kim, Youngwan So, Sogang University; Hong Dae Hyoung, Sogang University, Korea; Joungcheol Kim, Soonjoo Moon, Kyonglak Lee, Sehyun Oh, SK telecom
4. **Capacity Increase in GSM Networks Using Source-Adaptive AMR**  
Andre Noll Barreto, INdT; Riku Pirhonen, Nokia Networks
5. **On Modelling Spatial Traffic and Service Non-Uniformities in WCDMA Reverse Link**  
Ferran Adelantado, Oriol Sallent, Jordi Perez-Romero, Universitat Politècnica de Catalunya (UPC)

*Tuesday 9 May 08:30 - 10:10 Connaught*

#### **4D: Transportation Systems**

*Chair: Saman Halgamuge, University of Melbourne, Australia*

1. **Low Complexity Parameter Estimation for the Multi-antenna Generalized Rake Receiver**  
Tracy Fulghum, Ericsson, Inc.; Doug Cairns, Ericsson Inc.; Gregory E. Bottomley, Ericsson Research, RTP, NC USA; Carmela Cozzo, Ericsson, Inc.
2. **Fine Frequency Offset Estimation for Frequency-Selective Channels**  
Ayman Abdel-Samad, MIMOS Berhad
3. **Adaptive CDMA Multipath Delay Tracker For Closely Spaced Multipaths**  
Tianxiang Yao, Jiangli Zhu, Aiqing Huang, Xiuqing Ye, Weikang Gu, Zhejiang University
4. **Estimation of the Channel-Impulse-Response Length for Adaptive OFDM Systems Based on Information Theoretic Criteria**  
Ali Aassie Ali, University of Magdeburg; Van Duc Nguyen, International University Bremen; Kyandoghene Kyamakya, University of Klagenfurt; A.S. Omar, University of Magdeburg
5. **A Channel Estimation Technique for Uplink TDD MC-CDMA**  
Ivan Cosovic, DoCoMo Communications Laboratories Europe; Luca Sanguinetti, University of Pisa
6. **Improved Frequency Domain SNR Estimator Using DCT in Mobile Fading Channels**  
Sungtae Kim, Yonsei University; Goohyun Park, Samsung Electronics; Takki Yu, Hyunkyu Yu, Jaegu Lee, Daesik Hong, Yonsei University

*Tuesday 9 May 08:30 - 10:10 Mayfair 1*

#### **4E: Channel Estimation 2: MIMO**

*Chair: Yi Yuan, France Telecom R&D*

1. **On Channel Estimation for Layered Space-Time Block Spread CDMA Systems**  
Surya Dharma Tio, A.S. Madhukumar, A. B. Premkumar, Nanyang Technological University; Xiaoming Peng, Institute for Infocomm Research
2. **Enhanced Phase-Shifted Pilots Based Channel Estimation for MIMO-OFDM Systems with Virtual Subcarriers**  
Dong Li, Alcatel Shanghai Bell; Xiaolong Zhu, Alcatel Shanghai Bell Co., Ltd, Shanghai; Hongwei Yang, Liyu Cai, Alcatel Shanghai Bell
3. **A Carrier Interferometry based Channel Estimation Technique for One-Cell Reuse MIMO-OFDM/TDMA Cellular Systems**  
Kazunari Yokomakura, Seiichi Sampei, Osaka University; Hiroshi Harada, National Institute of Information and Communications Technology; Norihiko Morinaga, Hiroshima International University
4. **Performance Analysis of Maximum-Likelihood Semiblind Estimation of MIMO Channels**  
Tianbin Wo, Peter Adam Hoehner, University of Kiel; Ansgar Scherb, Karl-Dirk Kammeyer, University of Bremen
5. **SGA Based Symbol Detection and EM Channel Estimation for MIMO Systems**  
Yugang Jia, Christophe Andrieu, Robert J. Piechocki, University of Bristol; Magnus Sandell, Toshiba Research Europe Ltd.
6. **Extrapolation of Time-Varying MIMO Channels for an E-SDM System**  
Bui Huu Phu, Yasutaka Ogawa, Takeo Ohgane, Toshihiko Nishimura, Hokkaido University



Tuesday 9 May 08:30 - 10:10 Mayfair 2

#### 4F: CDMA

Chair: T.S. Ng, The University of Hong Kong

- 1. Frequency-Hopping CDMA Wireless Communication Systems Using Prime Codes**  
Cheng-Yuan Chang, Chih-Cheng Wang, Guu-Chang Yang, Mao-Fu Lin, Yu-Shing Liu, National Chung Hsing University; Wing C. Kwong, Hofstra University
- 2. A Novel Peak-Windowing Technique for WCDMA Systems**  
Hoi Kuo, S. W. Cheung, University of Hong Kong; Simon S. F. Hau, Hong Kong Polytechnic University
- 3. Downlink DS-CDMA Transmission with Joint MMSE Equalization and ICI Cancellation**  
Kazuaki Takeda, Koichi Ishihara, Fumiyuki Adachi, Tohoku University
- 4. Chip-interleaved Multi-rate CDMA with 2-Dimensional OVSF Spreading**  
Le Liu, Fumiyuki Adachi, Tohoku University
- 5. Non-Data Aided MMSE Receiver for DS/CDMA Systems**  
Tsui-Tsai Lin, National United University
- 6. Update Rate of Channel Estimation for UMTS-HSDPA in Time-Varying Channels**  
Klemens Freudenthaler, University of Linz; Joachim Wehinger, Christoph F. Mecklenbräuker, ftw, Forschungszentrum Telekommunikation Wien; Andreas Springer, University of Linz

Tuesday 9 May 08:30 - 10:10 Mayfair 3

#### 4G: Implementation 1

Chair: Graeme Woodward, Agere Systems Australia

- 1. Experimental Evaluation of Eigenbeam MIMO-OFDM Implemented in FPGA for Wireless LAN**  
Takeshi Onizawa, NTT Corporation; Atsushi Ohta, Yusuke Asai, Satoru Aikawa, Nippon Telegraph and Telephone Corporation
- 2. System Design of a Configurable Highly Digital UMTS/NAVSAT RF-Receiver**  
Rainer Stuhlberger, University of Linz; Linus Maurer, DICE GmbH & Co KG; Christian Wicpalek, University of Linz; Eckart Goehler, Guenter Heinrichs, Jon Winkel, Ifen GmbH; Christian Drewes, Infineon Technologies AG; Andreas Springer, University of Linz
- 3. Performance of Differential Pulse-Position Modulation (DPPM) with Concatenated Coding over Indoor Wireless Infrared Communications**  
Ubolthip Sethakaset, Aaron Gulliver, University of Victoria
- 4. Variable Bandwidth for GERAN Evolution with Regular Frequency Planning**  
Olli Piirainen, Jari Hulkkonen, Kari Niemelä, Mikko Säily, Nokia Networks
- 5. AGC and Quantization Effects in a Zero-Forcing MIMO Wireless System**  
Boyd M. Murray, Iain B. Collings, CSIRO
- 6. Performance Analysis of Pulse Width Modulated RF Class-E Power Amplifier**  
Kevin Tom, Mike Faulkner, Victoria University; Thomas Lejon, Ericsson AB

Tuesday 9 May 08:30 - 10:10 Lumina

#### 4H: Propagation 2

Chair: Carol Wilson, CSIRO, Australia

- 1. Carrier Frequency Effects on Pathloss**  
Mathias Riback, Jonas Medbo, Ericsson Research; Jan-Erik Berg, Ericsson AB; Fredrik Harrysson, Henrik Asplund, Ericsson Research

#### 2. Spatial Characterization of 60 GHz Indoor Channels by Fast Gaussian Beam Tracking Method and Comparison with Measurements

Rida Tahri, France Telecom R&D; Sylvain Collonge, Gheorghe Zaharia, IETR/INSA de Rennes; Ghais El Zein, IETR/INSA de Rennes

#### 3. Frequency Selectivity of 60-GHz LOS and NLOS Indoor Radio Channels

Haibing Yang, Peter F.M. Smulders, Matti H.A.J. Herben, Eindhoven University of Technology

#### 4. UWB Spatial-Frequency Channel Characterization

Wen Zhang, The Australian National University; Thushara D. Abhayapala, WSP,NICTA; Jian Zhang, Wireless Signal Processing Program, National ICT Australia

Tuesday 9 May 08:30 - 10:10 Pre-Function Area

#### 4P: Transmission Technology Posters 2

- 1. Field Experiments on Real-Time 1-Gbps High-Speed Packet Transmission in MIMO-OFDM Broadband Packet Radio Access**  
Hidekazu Taoka, Noriyuki Maeda, Kenichi Higuchi, Mamoru Sawahashi, NTT DoCoMo, Inc.
- 2. IQ Space Frequency Time Codes for MIMO-OFDM Systems**  
Samir Al-Ghadhban, R. Michael Buehrer, Virginia Tech; Brian Woerner, West Virginia University
- 3. Minimum Selection GSC with Down-Link Power Control**  
Mohamed-Slim Alouini, Khalid A. Qaraqe, Texas A&M University at Qatar
- 4. Exploiting Channel Time Selectivity in Pilot-Aided Alamouti STBC Systems**  
Woon Hau Chin, Institute for Infocomm Research
- 5. Optimal Beamforming for Sum-MSE Minimization in MIMO Downlink Channels**  
Gan Zheng, The University of Hong Kong; Kit K Wong, University of Hull; T.S. Ng, The University of Hong Kong
- 6. A Novel Power Allocation Strategy for Finite Alphabet in MIMO Systems**  
Jin-Liang Huang, Svante Signell, Royal Institute of Technology
- 7. Design Criteria of MIMO Systems**  
Hajime Suzuki, Mark Hedley, Graham Daniels, CSIRO
- 8. On Ordering Optimization for MIMO Systems with Decentralized Receivers**  
Rene Habendorf, Gerhard Fettweis, Technische Universität Dresden
- 9. Performance of Multi-Carrier Access Schemes with Receiver Impairments in Down Link Indoor Environment**  
Suvra Sekhar Das, AAU, TCS; Rajeshwar Rao, TCS
- 10. Some Statistical Properties of Multicarrier Signals and Related Measures**  
Ali Behravan, Chalmers university of technology
- 11. The Application of Spatial Shifting for Peak-to-Average Power Ratio Reduction in MIMO OFDM Systems**  
Tim Schenk, Peter F.M. Smulders, Erik Fledderus, Eindhoven University of Technology
- 12. Performance Comparison of UWB Hopping Codes in a Multi-User Rich Scattering Environment**  
Keni Popovski, B.J. Wysocki, Tadeuz A. Wysocki, University of Wollongong

### 13. Codeword Length Optimization for CPPUWB Systems

Yu-Hao Chang, Shang-Ho Tsai, Xiaoli Yu, C.-C. Jay Kuo, University of Southern California

Tuesday 9 May 10:40 - 12:20 Bristol

### 5B: Sensor Networks 2

Chair: Guoqiang Mao, University of Sydney, Australia

- 1. Aggregation Time Control Algorithm for Time Constrained Data Delivery in Wireless Sensor Networks**  
Jae Young Choi, Sunghyun Choi, Wook Hyun Kwon, Seoul National University; Hong Seong Park, Kangwon National University
- 2. A Novel Time Synchronization Scheme in Wireless Sensor Networks**  
Liming He, Beijing University of Posts and Telecommunications; G.S. Kuo, NCCU
- 3. Sensor Scheduling For Target Tracking Using Particle Swarm Optimization**  
Maheswararajah Suhinthan, Saman Halgamuge, University of Melbourne
- 4. Cooperative Diversity with Disconnection Constraints and Sleep Discipline for Power Control in Wireless Sensor Networks**  
Carlo Fischione, KTH; Alvise Bonivento, UCB; Karl Enrik Johansson, KTH; Alberto Sangiovanni-Vincentelli, UCB
- 5. Routing Protocol of Sustainable Sensor Networks with High Exchangeability of Nodes**  
Yuichi Yuasa, University of Shizuoka; Masaki Bandai, Takashi Watanabe, Shizuoka University
- 6. Bi-directional Amplification of Throughput in a Wireless Multi-Hop Network**  
Petar Popovski, Hiroyuki Yomo, Aalborg University

Tuesday 9 May 10:40 - 12:20 Grosvenor

### 5C: Location & Mobility 1

Chair: David Everitt, University of Sydney, Australia

- 1. A Novel Location Algorithm Based on Dynamic Compensation Using Linear Location Prediction in NLOS Situations**  
Lei Mu, Beijing University of Posts and Telecommunications; G.S. Kuo, NCCU; Ningning Tao, Beijing University of Posts and Telecommunications
- 2. A Proposal of Location Estimation with Maximum likelihood Function using Joint PDF of Received Signals and prior Measured Signals**  
Kana Azuma, Kumiko Matsumoto, Takeshi Hattori, Sophia University
- 3. Enhanced Location Estimation with the Virtual Base Stations in Wireless Location Systems**  
Chao-Lin Chen, Kai-Ten Feng, National Chiao Tung University
- 4. Dynamic Planning of Personalized Location Areas for future PCS networks with a Simulated Annealing Algorithm**  
Jun Zheng, Queens College - CUNY; Emma Regentova, Radhika Varadarajan, University of Nevada, Las Vegas
- 5. Particle Filters and Position Tracking in Wi-Fi Networks**  
Zawar Shah, Robert Malaney, National ICT Australia
- 6. An Improved Location Tracking Algorithm with Velocity Estimation in Cellular Radio Networks**  
Jemin Lee, Hyungjoon Song, Sungmok Oh, Daesik Hong, Yonsei University

Tuesday 9 May 10:40 - 12:20 Connaught

### 5D: Channel Estimation 3

Chair: Khalid Qarage, TAMU-Q, USA

- 1. A Portable Real-Time Lane Departure Warning System based on Embedded Calculating Technique**  
Pei-Yung Hsiao, Chun-Wei Yeh, Chang Gung University
- 2. Communications Based Positive Train Control Systems Architecture in the USA**  
Mark Hartong, George Mason University; Rajni Goel, Howard University; Duminda Wijesekera, George Mason University
- 3. Hybrid Navigation Guidance for Intelligent Mobiles**  
Ricardo Vázquez, Eduardo Javier Perez, Cristina Urdiales, Jose Carlos del Toro, Francisco Sandoval, University of Malaga
- 4. On the Effectiveness of a GPRS based Intelligent Transportation System in a Realistic Scenario**  
Barbara Masini, IEIT-BO/CNR, University of Bologna; Luca Zuliani, Teleca Italia s.p.a.; Oreste Andrisano, IEIT-BO/CNR
- 5. Simulation of Thermopile IR-Sensors for Automotive Safety Applications**  
Dirk Linzmeier, Andreas Köstler, DaimlerChrysler AG
- 6. A Sensor Fusion Approach to Estimate Clamp Force in Brake-by-Wire Systems**  
Stephen Saric, Alireza Bab-Hadiashar, Reza Hoseinnezhad, Swinburne University of Technology

Tuesday 9 May 10:40 - 12:20 Mayfair 1

### 5E: Space-Time Coding 1

Chair: Jae Hong Lee, Seoul National University, Korea

- 1. On the Error Probability of Space-Time Block Codes over Keyhole MIMO Channels**  
Yi Gong, Nanyang Technological University
- 2. Closed-Form Symbol Error Probabilities of Distributed Orthogonal Space-Time Block Codes**  
Mischa Dohler, France Telecom; Marilyn Arndt, France Telecom R&D; Dominique Barthel, France Telecom; Afzal Lodhi, Hamid Aghvami, King's College London
- 3. Performance Analysis of V-BLAST System With Imperfect Channel Estimation**  
Haitao Liu, Daoben Li, Beijing University of Posts and Telecommunications
- 4. An Improved Recursive Algorithm for BLAST**  
Hufei Zhu, National University of Singapore; Zhongding Lei, Francois Chin, Institute for Infocomm Research
- 5. Capacity of Alamouti Coded OFDM Systems in Time-Varying Multipath Rayleigh Fading Channels**  
Jun Wang, Oliver Yu Wen, Shaoqian Li, University of Electronic Science and Technology of China; Roger Shu Kwan Cheng, The Hong Kong University of Science and Technology
- 6. A Data-Bearing Approach for Pilot-Aiding in Space-Time Coded MIMO Systems**  
Chaiyod Pirak, University of Maryland College Park & Chulalongkorn University; Z. Jane Wang, University of British Columbia; K. J. Ray Liu, University of Maryland College Park; Somchai Jitapunkul, Chulalongkorn University

Tuesday 9 May 10:40 - 12:20 Mayfair 2

### 5F: Synchronization 1: OFDM

Chair: Patrick Leung, Victoria University, Australia

- 1. A Novel Timing Synchronization Method for Distributed MIMO-OFDM System**  
Feng Guo, Dong Li, Hongwei Yang, Liyu Cai, Alcatel Shanghai Bell

2. **Residual Carrier and Sampling Frequency Synchronization in Multiuser OFDM Systems**  
Lars Haering, Stefan Bieder, Andreas Czylik, University of Duisburg-Essen
3. **Timing Synchronisation for OFDM-WLANs with Time Averaging Scheme**  
Ying Tan, Scott Leyonhjem, Mike Faulkner, Victoria University
4. **Robust OFDM Timing Synchronisation**  
Chris Williams, Mark Beach, University of Bristol; Stephen McLaughlin, University of Edinburgh
5. **Real-time Phase Tracking Method for IEEE802.11a/g/n Receiver under Phase Noise Condition**  
Ren Sakata, Koji Akita, Kazumi Sato, Toshiba Corp.

Tuesday 9 May 10:40 - 12:20 Mayfair 3

### 5G: Ultra-Wideband Systems 2

Chair: Andrew Zhang, National ICT Australia

1. **Empirical Ultra WideBand Path Loss model in Office Environments**  
Jinwon Choi, Noh-Gyoung Kang, Yu-Suk Sung, Seong-Cheol Kim, Seoul National University
2. **UWB Channel Estimation: Design and Performance Evaluation**  
Yuheng Huang, Amol Rajkotia, Samir Soliman, Qualcomm
3. **Multiple Access Performance of TR-UWB System Using a Combined PPM and Differential Multi-Pulse Modulation**  
Jakkrapong Sumethnapis, Kiyomichi Araki, Tokyo Institute of Technology
4. **Multiband-OFDM UWB vs IEEE802.11n System Level Design Considerations**  
Ying Chen, Australian National University, National ICT Australia; Jian Zhang, Wireless Signal Processing Program, National ICT Australia; Dhammika Jayalath, Australian National University, National ICT Australia
5. **New Preamble Design for Reduced-Complexity Timing Acquisition in UWB Systems**  
Ki-Ho Kil, Bong-Gee Song, Samsung Electronics Co., Ltd.; Sung-Yoon Jung, Dong-Jo Park, Korea Advanced Institute of Science and Technology

Tuesday 9 May 10:40 - 12:20 Lumina

### 5H: Multiple Antennas & MIMO 1

Chair: Bo Hagerman, Ericsson Research, Sweden

1. **Dual Antenna Terminals in an Indoor Scenario**  
Fredrik Harrysson, Henrik Asplund, Mathias Riback, Anders Derneryd, Ericsson Research
2. **The Performance Analysis of Diversity Technologies for Mobile Ad Hoc Communications between Moving Cars**  
Deok-Hwan Lee, Jae-Min Shin, Hoseo University; Jeong Gil Ko, Korea University; Hyun Seo Oh, ETRI; Hak Lim Ko, Hoseo University
3. **Field Trial Results of 4-Way Receive Diversity in a Live GSM Network**  
Magnus Olsson, Bo Hagerman, Mathias Riback, Ericsson Research; Michael Hesse, Branko Niksic, Telstra, Radio Network Development
4. **Impact of Receiver Inter-Chain Coupling on BER Performance of Space-Time Coded MIMO Systems**  
Christiane Kuhnert, Stephan Schulteis, Andreas Hangauer, Werner Wiesbeck, University of Karlsruhe

5. **Propagation Parameter Tracking using Variable State Dimension Kalman Filter**  
Jussi Salmi, Andreas Richter, Mihai Enescu, Visa Koivunen, Pertti Vainikainen, Helsinki University of Technology

Tuesday 9 May 10:40 - 12:20 Pre-Function Area

### 5P: Mobile Networks Posters 2

1. **LAMOR: Lifetime-Aware Multipath Optimized Routing Algorithm for Video Transmission over Ad Hoc Networks**  
Liansheng Tan, Ling Xie, Central China Normal University; K T Ko, City University of Hong Kong; Ming Lei, Wuhan University; Moshe Zukerman, The University of Melbourne
2. **M3RP: Multi-rate/Multi-range Multicast Routing Protocol For Mobile Ad Hoc Networks**  
Jenhui Chen, Jhenjhong Guo, Chih-Chieh Wang, Chang Gung University
3. **Power Saving with p-Persistent Sleep Decision for Ubiquitous Mobile Communications**  
Ji Wun Lee, Wha Sook Jeon, Seoul National University; Dong Geun Jeong, Hankuk University of Foreign Studies
4. **Geometry-driven Scheme for Geocast Routing in Mobile Ad Hoc Networks**  
Sung-Hee Lee, Young-Bae Ko, Ajou University
5. **A Location-Aware Resource Reservation Algorithm with User Class Differentiation in WCDMA**  
Juan Sanchez-Gonzalez, Jordi Perez-Romero, Oriol Sallent, Universitat Politecnica de Catalunya
6. **Infrastructure Cost Benefits of Ambient Networks Multi-Radio Access**  
Mikael Prytz, Ericsson Research; Peter Karlsson, Catarina Cedervall, TeliaSonera; Aurelian Bria, Royal Institute of Technology; Ingo Karla, Alcatel
7. **A New Solution to Estimate the Available Bandwidth in MANETs**  
Hoang Vinh Dien, Zhenhai Shao, Masayuki Fujise, National Institute of Information and Communications Technology
8. **Induced Cooperative Multi-user Diversity Relaying for Multi-hop Cellular Networks**  
Keivan Navaie, Halim Yanikomeroglu, Carleton University
9. **Experimental Results on Indoor Localization Technique through Wireless Sensors Network**  
Thomas Pavani, Marco Mazzotti, Guido Costa, IEIIT-BO/CNR; Andrea Conti, ENDIF, University of Ferrara; Davide Dardari, DEIS, University of Bologna
10. **Throughput Evaluation of ARQ Scheme for Multi-Route Coding in Wireless Multi-hop Networks**  
Hiraku Okada, Niigata University; Tadahiro Wada, Kouji Ohuchi, Shizuoka University; Masato Saito, Nara Institute of Science and Technology; Takaya Yamazato, Masaaki Katayama, Nagoya University
11. **Multi-Ring Cyclic Scheduling for Spatial-TDMA Energy-Saving MAC Protocol in MANET**  
Wei-Chih Harry Lin, National Kaohsiung First University of Science and Technology; Shuoh Ren Tsai, National Kaohsiung First University of Science & Technology
12. **A Radio-Link Adaptive Routing Protocol for Mobile Ad Hoc Networks**  
Jenn-Hwan Tarn, Bing-Wen Chuang, Yi-Luen Wen, National Chiao Tung University

Tuesday 9 May 13:50 - 15:30 Kensington

**6A: Future Wireless QoS**

Chair: Victor Kueh, Fujitsu Laboratories of Europe, UK

- 1. Supporting Vertical Handover by a Self-Organizing Multidimensional P2P Overlay**  
Kurt Tutschku, Tobias Hossfeld, Simon Oechsner, University of Wuerzburg; Frank-Uwe Andersen, Siemens AG
- 2. Adaptive Application Mechanisms in Wireless LAN Network**  
See Leng Ng, Simon Hoh, Andy Low, Devinder Singh, Fang Liang Lim, Khong Neng Choong, BT Asian Research Centre
- 3. Dynamic Load Balancing Based on Sojourn Time in Multitier Cellular Systems**  
Guoqin Ning, Guangxi Zhu, Qingxia Li, Renyong Wu, Department of Electronics & Information Engineering, Huazhong University of Science & Technology, Wuhan, P.R.China
- 4. Iterative Water-filling for Load-balancing in Wireless LAN or Microcellular Networks**  
Jeremy K. Chen, Theodore S. Rappaport, Gustavo de Veciana, The University of Texas at Austin
- 5. On the Feedback Transfer Effort for Rate-Adaptive Multiuser Systems**  
Anthony Ekpenyong, Yih-Fang Huang, University of Notre Dame

Tuesday 9 May 13:50 - 15:30 Bristol

**6B: CDMA & 3G Networks 2**

Chair: David Everitt, University of Sydney, Australia

- 1. Enhanced Slotted Mode Operation Considering Call Inter-arrival Time Distribution in cdma2000 Networks**  
Yuchul Kim, Jungsoo Jung, Beomsik Bae, Daeyun Kim, Younsun Kim, Samsung Electronics
- 2. A Novel Network Layout for CDMA Cellular Networks with Optimal Base Station Antenna Height and Downtilt**  
Jarkko Itkonen, Balázs P. Tuzson, ECE Ltd; Jukka Lempiäinen, Tampere University of Technology
- 3. Analytical Approximation of Other-cell Interference in the Uplink of CDMA Cellular Systems**  
Tuo Liu, David Everitt, University of Sydney
- 4. Performance Investigation of Secondary Scrambling Codes in WCDMA Systems**  
Hu Rong, Ericsson Research (Beijing); Kimmo Hiltunen, Ericsson Research
- 5. WCDMA 6-sector Deployment - Case Study of a Real Installed UMTS-FDD Network**  
Bo Hagerman, Ericsson Research; Davide Imbeni, Ericsson Italy; Jozsef Barta, Ericsson Research; Adam Pollard, Vodafone; Rainer Wohlmuth, Vodafone Germany; Peter Cosimini, Vodafone United Kingdom

Tuesday 9 May 13:50 - 15:30 Grosvenor

**6C: Network Planning & Performance**

Chair: Paul Fitzpatrick, Telstra, Australia

- 1. Using a New Heuristic Algorithm to Solve Channel Assignment Problems in Cellular Radio Networks**  
Seyed Alireza Ghasempour Shirazi, Information and Communications Technology Faculty
- 2. On-Demand Channel Assignment Using Channel Segregation for Uplink DS-CDMA Multi-Hop Virtual Cellular Network**  
Lalla Soundous El Alami, Eisuke Kudoh, Fumiyuki Adachi, Tohoku University

**3. Initial Performance Evaluation on TD-SCDMA Long Term Evolution system**

Guangyi Liu, Zhang Ping, Beijing University of Posts and Telecommunications

**4. Cell Region Based Algorithm for 1xEV-DO Reverse-Link Rate Control**

Hyejeong Lee, Dong-Ho Cho, KAIST

**5. Joint Radio Resource Management over Very Tightly Coupled Heterogeneous Networks for Multimode Reconfigurable Terminals**

Abdul Hasib, Abraham Fapojuwo, University of Calgary

Tuesday 9 May 13:50 - 15:30 Connaught

**6D: IEEE 802.11 Wireless LANs**

Chair: Jamil Khan, University of Newcastle, Australia

- 1. SNMP-Based Approach to Load Distribution in IEEE 802.11 Networks**  
Li-Hsing Yen, Tse-Tsung Yeh, Chung Hua University
- 2. Optimal Channel Search Time for Handoff in the IEEE 802.11 WLANs**  
Li-Chun Wang, Hung Hsi Chen, Anderson Chen, Chung-Ju Chang, National Chiao Tung University, Taiwan
- 3. Distributed Channel-Adaptive Fair Allocation for IEEE802.11e WLAN**  
Stephen McLaughlin, David Laurenson, Yow-Yiong Edwin Tan, University of Edinburgh
- 4. Non-Linear Optimization of IEEE802.11e Super-frame Configuration**  
Russell Haines, Tim Lewis, Justin Coon, Neil Fanning, Toshiba Research Europe Ltd.
- 5. Rate Adaptive Reliable Multicast MAC Protocol for WLANs**  
Anas Basalamah, Hiroki Sugimoto, Takuro Sato, Waseda University

Tuesday 9 May 13:50 - 15:30 Mayfair 1

**6E: MIMO 3: Multiuser & Interference Cancellation**

Chair: Iain Collings, CSIRO, Australia

- 1. A Minimum Mean-Square Error Criterion Based Nonlinear Joint Transmitter-Receiver Processing Algorithm for the Downlink of Multi-User MIMO Systems**  
Jia Liu, Witold A. Krzymieñ, University of Alberta
- 2. The Effect of Computation and Feedback Delay on the Capacity of Multiuser MIMO Systems in a Small Outdoor Cell**  
Matthew Webb, Mythri Hunukumbure, Mark Beach, Andrew Nix, University of Bristol
- 3. Low Complexity Soft Interference Cancellation for MIMO-Systems**  
Steffen Bittner, Ernesto Zimmermann, Gerhard Fettweis, Technische Universität Dresden
- 4. APP Decoding of Block Codes over Gilbert-Elliott Channels using Generalized Weight Polynomials**  
Wayne Griffiths, Western Australian Telecommunications Research Institute; Hans-Jürgen Zepemick, Blekinge Institute of Technology; Manora Caldera, Western Australian Telecommunications Research Institute
- 5. Adaptive Mode Selection for Multiuser MIMO Downlink Systems**  
Yong-Up Jang, Korea Advanced Institute of Science and Technology; Hyuck M. Kwon, Wichita State University; Yong Hoon Lee, Korea Advanced Institute of Science and Technology (KAIST)

- 6. MMSE Equalizer and Chip Level Inter-Antenna Interference Canceler for HSDPA MIMO Systems**  
Maarit Melvasalo, Pekka Jänis, Visa Koivunen, Helsinki University of Technology

*Tuesday 9 May 13:50 - 15:30 Mayfair 2*

**6F: OFDM - PAPR & Synchronization**

*Chair: Jean Armstrong, Monash University, Australia*

- 1. Peak to Average Power Ratio Properties of MC-CDMA and SM-CDMA**  
Maryam Sabbaghian, David D. Falconer, Carleton University
- 2. Reduction of the Peak-to-Average Power Ratio for the OFDM/OQAM Modulation**  
Alexandre Skrzypczak, Jean-Philippe Javaudin, Pierre Siohan, France Telecom Research and Development Division
- 3. Efficient Algorithms for PAPR Reduction in OFDM Transmitters Implemented using Fixed-Point DSPs**  
Brendon Schmidt, Chi Ng, Christina Harris, Patrick Yien, Ushodaya Saripalle, Andrew Price, Monash University; Giuseppe Scelsi, Simon Brewer, Robert Slaviero, Analog Devices Australia; Jean Armstrong, Monash University
- 4. Synchronization and Channel Estimation in Cyclic Postfix Based OFDM System**  
Jongkyung Kim, Sangjin Lee, Yonsei University; Jong-Soo Seo, Yonsei University
- 5. ZCZ Sequence-based Frequency Synchronization for Interleaved OFDMA Uplink**  
Su Huan, Zhang Jianhua, Zhang Ping, Beijing University of Posts and Telecommunications
- 6. Sequential Search Method with Different Thresholds for Clipped Power for OFDM Signal**  
Jiyun Shen, Hiromasa Fujii, Takahiro Asai, Hitoshi Yoshino, NTT DoCoMo, Inc.

*Tuesday 9 May 13:50 - 15:30 Mayfair 3*

**6G: Crosslayer Design 2**

*Chair: Jamie Evans, University of Melbourne, Australia*

- 1. Analysis of the Go-Back-N Protocol on Finite State Markov Fading Channels**  
Cecilio Pimentel, Rodrigo Leal, Federal University of Pernambuco
- 2. Code Design of Type-II Hybrid ARQ with Iterative Receivers over ISI Channels**  
Allen Chuang, University of Sydney; Iain B. Collings, CSIRO
- 3. Multi-User ARQ**  
Peter Larsson, Niklas Johansson, Ericsson Research
- 4. Impact of an ARQ Scheme in the MAC/LLC Layer on Upper-layer Packet Transmissions over a Markovian Channel**  
Jun-Bae Seo, Electronics and Telecommunication Research Institute
- 5. MC-CDMA HARQ with Variable Spreading Factor**  
Shinsuke Takaoka, Haris Gacanin, Fumiyuki Adachi, Tohoku University

*Tuesday 9 May 13:50 - 15:30 Lumina*

**6H: Propagation 3**

*Chair: Allan Williamson, University of Auckland, New Zealand*

- 1. Effect of Spread Spectrum Pilot on SVD Based Adaptive Duplexer**  
Matthew Williamson, Mike Faulkner, Victoria University

- 2. Symbol Detection Solving the Total Least Squares Problem under Channel Uncertainties**  
Hyun Jong Yang, Joohwan Chun, Korea Advanced Institute of Science and Technology

- 3. Characterizing the Mobile Radio Channel as a Conservative Dynamical System**  
Steffen Bug, Alexey Nazarov, Kira Kastell, Rolf Jakob, Darmstadt University of Technology

- 4. Requirements for Standard Radiowave Propagation Models for Vehicular Environments**  
David Michelson, James Chuang, University of British Columbia; Max Kicherer, BMW Group Technology Office

- 5. Two New Methods for the Generation of Multiple Uncorrelated Rayleigh Fading Waveforms**  
Matthias Pätzold, Bjorn Olaf Hogstad, Agder University College

- 6. Generation of Nakagami-m Fading Channels**  
Tsan-Ming Wu, Chung Yuan Christian University

*Tuesday 9 May 13:50 - 15:30 Pre-Function Area*

**6P: Mobile Applications & Security Posters; Transportation Systems Posters**

- 1. A RLS Based UWB Localization Scheme for Wireless Networks**  
Ananth Subramanian, Institute for Infocomm Research, A-STAR
- 2. User's Request-responsible Data Broadcasting Service for T-DMB/CDMA Converged Environment**  
Byungjun Bae, Chunghyun Ahn, ETRI; Hyeocheol Jang, Jongdeok Kim, Pusan National University
- 3. Design of a Joint Defense System for Mobile Ad Hoc Networks**  
Huei-Wen Ferng, Chien-Liang Liu, National Taiwan University of Science and Technology
- 4. A Traveler Information Service Structure in Hybrid T-DMB and Cellular Communication Network**  
Sammo Cho, ETRI; Youngho Jeong, Electronics and Telecommunications Research Institute; Kim Geon, ETRI; SoonChoul Kim, Electronics and Telecommunications Research Institute; Chunghyun Ahn, ETRI; Hyuckjae Lee, University of Information and Communication
- 5. A Mobile Hand Held Computing System for Out Patient Workflow in Hospital Environment**  
Suneetha Uppu, Doan B. Hoang, Tom Hintz, University of Technology, Sydney
- 6. RSVP Context Extraction in IP Mobility Environments**  
Chuda Liu, Xi'an Jiaotong University
- 7. Intelligent Vehicle Mobility Modeling Based on a Sub-Optimal Path Finding Method**  
AmirReza Momen, Ali Sheikh Hassani, ITRC; H.Ebrahimzad, Amirkabir University of Technology; Alireza Mirzaee, ITRC
- 8. Affordable X-By-Wire Technology based on an Innovative, Scalable E/E Platform-Concept**  
Michael Armbruster, University of Stuttgart; Erik Sieglin, DaimlerChrysler; Eduard Zimmer, Matthias Lehmann, Reinhard Reichel, University of Stuttgart; Gernot Spiegelberg, Armin Sulzmann, DaimlerChrysler
- 9. Power Compensator using Lithium-Ion Battery for DC Railway and its Simulation by EMTF**  
Naoto Nagaoka, Haruki Oue, Masayuki Sadakiyo, Nobutaka Mori, Akihiro Ametani, University of Doshisha; Shigeki Umeda, Jun Ishii, West Japan Railway Co.

## 10. Improvements in Railway Communication via GSM-R

Kira Kastell, Steffen Bug, Alexey Nazarov, Rolf Jakoby,  
Darmstadt University of Technology

Tuesday 9 May 16:00 - 17:40 Bristol

### 7B: Ad-hoc Networks 3

Chair: *Leif Hanlen, National ICT Australia*

- 1. Word-of-Mouth in Radio Access Markets**  
Pietro Lungaro, Wireless@KTH
- 2. Dynamic Path Adaptation Routing Protocol for Mobile Ad Hoc Networks**  
Kwangil Lee, Tim S Yao, University of Texas
- 3. On The Distance Distributions of The Wireless Ad Hoc Networks**  
Chih-Cheng Tseng, Jin-Wen Institute of Technology; K-C Chen, Hsuan-Tsang Chen, National Taiwan University
- 4. Multi-Metric Gateway Discovery for MANET**  
Yi Fu, National University of Singapore; Chan Kwang Mien, Kean Soon Tan, Boon Sain Yeo, Institute for Infocomm Research
- 5. An Optimised Gateway Selection Mechanism for Ad hoc Networks connected to the Internet**  
Mona Ghassemian, Vasilis Friderikos, Hamid Aghvami, King's College London
- 6. A Space-Time Based Approach to Solving the Gain Asymmetry in MIMO Ad Hoc Networks**  
Francesco Rossetto, University of Padova; Michele Zorzi, University of Ferrara

Tuesday 9 May 16:00 - 17:40 Grosvenor

### 7C: Mobile Networks 1

Chair: *David Everitt, University of Sydney, Australia*

- 1. Wavelet Analysis for Velocity Characterization in Mobile Networks**  
Salah Eddine Elayoubi, France Telecom; Afef Ben Hadj Alaya, Emmanuelle Villebrun, Benoit Fourestié, France Telecom R&D
- 2. Database Correlation using Bayes Filter for Mobile Terminal Localization in GSM Suburban Environments**  
Mohamed Khalaf-Allah, University of Hannover; Kyandoghere Kyamakya, University of Klagenfurt
- 3. Utility Based Optimal Layering and Adaptive Transmission for Video Multicasting over Wireless Systems**  
Daiming Qu, Jing Shi, Guangxi Zhu, Huazhong University of Science & Technology
- 4. A deployment model of an OFDM based broadband wireless access networks**  
Priya Kailasam, National University of Singapore; Yong Huat Chew, Boon Sain Yeo, Institute for Infocomm Research
- 5. Self-Organised Beamforming and Opportunistic Scheduling in an OFDM-based Cellular Network**  
Rainer Gruenheid, Hamburg University of Technology; Karsten Brueninghaus, BenQ Mobile GmbH & Co. OHG; Hermann Rohling, Hamburg University of Technology; Uwe Schwark, BenQ Mobile GmbH & Co. OHG

Tuesday 9 May 16:00 - 17:40 Connaught

### 7D: IEEE 802.16 WiMax

Chair: *K C Chen, National Taiwan University, Taiwan*

- 1. Quality of Service Scheduling for 802.16 Broadband Wireless Access System**  
Guobin Sun, Yanling Yao, Hongfei Zhu, STMicroelectronics

- 2. Considerations for VoIP Services in IEEE 802.16 Broadband Wireless Access Systems**  
Seung-Eun Hong, Oh-Hyeong Kwon, ETRI
- 3. Performance Analysis of Scheduling Algorithms for VoIP Services in IEEE 802.16e Systems**  
Howon Lee, Taesoo Kwon, Dong-Ho Cho, KAIST
- 4. Hard Handoff Scheme Exploiting Uplink and Downlink Signals in IEEE 802.16e Systems**  
Sunghyun Cho, Jonghyun Kwun, Chihyun Park, Jung-Hoon Cheon, Ok-Seon Lee, Kiho Kim, Samsung Advanced Institute of Technology

Tuesday 9 May 16:00 - 17:40 Mayfair 1

### 7E: Bit-Interleaved Coded Modulation

Chair: *Hajime Suzuki, CSIRO, Australia*

- 1. Real-time Multi-resolution Data Transmission over Correlated Fading Channels using Hierarchical Constellations**  
Md. Jahangir Hossain, University of British Columbia; Mohamed-Slim Alouini, Texas A&M University at Qatar; Vijay K. Bhargava, University of British Columbia
- 2. Performance of MIMO-OFDM-BICM on Measured Indoor Channels**  
Hajime Suzuki, Mark Hedley, Graham Daniels, CSIRO; Jinhong Yuan, University of New South Wales
- 3. Symbol Based Rate Adaptation in Coded MIMO-OFDM Systems**  
Chang Kyung Sung, Inkyu Lee, Korea University
- 4. Optimized Mappings for Iteratively Decoded BICM on Rayleigh Channels with IQ Interleaving**  
Thorsten Clevorn, Susanne Godtmann, Peter Vary, RWTH Aachen University
- 5. Adaptive Modulation and Coding for Bit Interleaved Coded Multiple Beamforming**  
Ersin Sengul, Enis Akay, Ender Ayanoglu, University of California, Irvine
- 6. Bit-Interleaved Coded Modulation with Iterative Interference Suppression for Multi-Sequence Signaling Based MC-CDMA**  
Der-Feng Tseng, National Taiwan University of Science and Technology

Tuesday 9 May 16:00 - 17:40 Mayfair 2

### 7F: Multiuser Techniques

Chair: *Anthony Soong, Huawei Inc, USA*

- 1. Iterative Multiuser Detection for Asynchronous Multi-Sequence Signaling Based CDMA Systems**  
Der-Feng Tseng, National Taiwan University of Science and Technology
- 2. Frequency-Domain Multiuser Detection for CP-Assisted DS-CDMA Signals**  
Paulo Silva, IST; Rui Dinis, IST, Tech. University of Lisbon
- 3. A Novel Dynamic Subcarrier Assignment Scheme for Multiuser OFDMA Systems**  
Marco Moretti, Michele Morelli, University of Pisa
- 4. Detection Opportunities for CDM-OFDMA**  
Ronald Raulefs, DLR; Armin Dammann, German Aerospace Center (DLR); Serkan Ayaz, DLR

**5. Dynamic Space-Frequency-Division Multiple-Access over Frequency-Selective Slow-Fading Channels**

Zhan Zhang, DoCoMo Beijing Communications Laboratories Co., Ltd.; Hidetoshi Kayama, DoCoMo Beijing Communications Laboratories Co., Ltd

**6. MMSE Receiver for Multiuser Interference Cancellation in Uplink OFDMA**

A. Chockalingam, Dheeraj Sreedhar, Indian Institute of Science, Bangalore

*Tuesday 9 May 16:00 - 17:40 Mayfair 3*

**7G: Detection 2**

*Chair: Daniel Ryan, CSIRO, Australia*

**1. On Detection of Distributed STBC-OFDM System with Multiple Carrier Frequency Offsets**

Zheng Li, Wenshu Zhang, Huazhong University of Science and Technology; Guangxi Zhu, Department of Electronics & Information Engineering, Huazhong University of Science & Technology, Wuhan, P.R.China

**2. Automatic Switch Between Static and Mobile Operation Modes in DVB-H/T Receivers**

Alessio Filippi, Sri Andari Husen, Stan Baggen, Philips Research

**3. Modulation Recognition of SDR Receivers Based on WNN**

Yaqin Zhao, Guanghui Ren, Zhi Zhong, Harbin Institute of Technology

**4. ML Detection with Blind Linear Prediction for Differential Space-Time Block Code Systems**

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

**5. Nonlinear Least Squares Lattice Algorithm for Identifying the Power Amplifier with Memory Effects**

Hui Li, Zhaowu Chen, Desheng Wang, Tsinghua University

**6. Performance analysis of maximum likelihood detection for MIMO systems**

Myeongcheol Shin, Yonsei University; Dong Seung Kwon, ETRI; Chungyong Lee, Yonsei university

*Tuesday 9 May 16:00 - 17:40 Lumina*

**7H: Smart Antennas 1**

*Chair: Jacob Gavan, Holon Academic Institute of Technology, Israel*

**1. CMA/Fractional-Delay Sequential Beamforming for Wireless Multipath Communications**

Salma Ait Farès, Institut National de la Recherche Scientifique - EMT; Tayeb A. Denidni, Institut National de la Recherche Scientifique; Sofiene Affes, INRS-EMT; Charles Despins, PROMPT-Quebec

**2. On the Combination of Receive Beamforming with Alamouti Decoders**

Chen Sun, ATR Wave Engineering Laboratories, Japan; Makoto Taromaru, ATR Wave Engineering Laboratories; Nemai Chandra Karmakar, Monash University

**3. A Parametric Channel Model for Smart Antennas Incorporating Mobile Station Mobility**

Salman Durrani, The Australian National University; Marek E Bialkowski, The University of Queensland

**4. Impact of the Pilot Signal per Beam on the Ideal Number of Beams and Capacity Gain of Switched Beam forming for WCDMA**

Luis Guilherme Uzeda Garcia, Nokia Technology Institute; Mangesh A. Ingale, Aalborg University; Per-Henrik

Michaelsen, Nokia Networks, Klaus Pedersen, tworks; Preben E. Mogensen, Nokia Networks, Aalborg, Denmark

**5. A Novel Beamspace Inter-bit Correlation 2D Rake Receiver for DS-CDMA Communication System**

Anmin Kong, Chunru Wan, Nanyang Technological University

*Tuesday 9 May 16:00 - 17:40 Pre-Function Area*

**7P: Transmission Technology Posters 3**

**1. Channel Estimation and Multiuser Detection for MC-DS/CDMA**

Bangwon Seo, Electronics and Telecommunications Research Institute; Jae Yong Ahn, ETRI; Hyung-Myung Kim, KAIST

**2. Carrier Frequency Offset Estimation with Lower Threshold Effect**

Meng-Hong Hsieh, Ju-Ya Chen, National Sun Yat-Sen University

**3. Fractional Spaced Channel Estimation and Shortening for Joint Delayed Decision Feedback Sequence Estimation**

Thorben Detert, Universität Darmstadt; Romain Drauge, École Supérieure d'Électricité Paris; Xuehong Zhou, Universität Darmstadt; Hartmut Wilhelm, formerly Siemens AG - Mobile Phones; Wen Xu, Siemens AG

**4. Recurrent Neural Network Based Narrowband Channel Prediction**

Wei Liu, Lie-Liang Yang, Lajos Hanzo, University of Southampton

**5. Analytical SIR Analysis and Performance Evaluation of the PIC Receiver in UMTS Multi-Cell Systems**

Ana M. Barbancho, Isabel Barbancho, Lorenzo J. Tardon, University of Malaga

**6. Low Complexity Successive Interference Cancellation for Per-Antenna-Coded MIMO-OFDM Schemes by Applying Parallel-SQRD**

Dirk Wübben, Karl-Dirk Kammeyer, University of Bremen

**7. Successive Interference Cancellation in Clipped and Product Combining Aided FFH Multi-User Systems**

Sohail Ahmed, Lie-Liang Yang, Lajos Hanzo, University of Southampton

**8. Single-Carrier Frequency-Domain Equalization for Space-Time Coded Systems Over Multipath Channels**

Yang Yang, Lehigh University; Yong Huat Chew, Tjeng Thiang Tjhung, Institute for Infocomm Research

**9. Joint Carrier Recovery and Turbo Decoding Method for TDMA Burst MODEM Under Very Low SNRs**

Pansoo Kim, ETRI

**10. A Polyphase-Based Processing for All-Digital UWB Receiver Architectures**

Marco Di Renzo, Fabio Graziosi, Fortunato Santucci, University of L'Aquila

**11. An All-Digital Clock Recovery Architecture for the BRAN Hiperaccess Uplink Receiver**

Pietro Savazzi, Paolo Gamba, University of Pavia; Sergio Callegari, Ericsson Lab Italy

**12. A Novel Transmitter Identification Technique for use in Distributed 8VSB DTV system**

Soon-Chan Kwon, Yonsei University; Yong-Tae Lee, ETRI; Jong-Soo Seo, Yonsei University

**Wednesday, 10 May 2006**

Wednesday 10 May 08:30 - 10:10 Kensington

### 8A: Wireless Security

Chair: Xun Yi, Victoria University, Australia

- 1. A Secure Wireless LAN Access Technique for Home Network**  
Ju-A Lee, University of Ajou; Jae-Hyun Kim, Ajou University; Jun-Hee Park, Kyeong-Deok Moon, ETRI
- 2. Secure Pairing Architecture for Wireless Mobile Devices**  
Janne Lindqvist, Sanna Liimatainen, Helsinki University of Technology; Tuomo Katajamaki, Elcoteq Design Center Oy
- 3. Using Certificate-based Binding Update Protocol to Hide the Movement of Mobile Nodes in MIPv6**  
Ying Qiu, Jianying Zhou, Feng BAO, Institute for Infocomm Research
- 4. An Efficient Scheme for Encrypted Data Aggregation on Sensor Networks**  
Tieyan Li, Huafei Zhu, Yongdong Wu, Institute for Infocomm Research
- 5. Secure Electronic Voting for Mobile Communications**  
Xun Yi, Pietro Cerone, Yanchun Zhang, Victoria University
- 6. Modeling the Spread of Worm Epidemics in Vehicular Ad Hoc Networks**  
Maziar Nekovee, BT Research

Wednesday 10 May 08:30 - 10:10 Bristol

### 8B: Mobile Networks 2

Chair: Arek Dadej, University of South Australia

- 1. Optimisation of a Multicode CDMA In-Building Communication System**  
Joseph Wong, Kevin Sowerby, Michael Neve, The University of Auckland
- 2. Coded Bi-directional Relaying**  
Peter Larsson, Niklas Johansson, Kai-Erik Sunell, Ericsson Research
- 3. Correlated FEC Scheme for Transmission Reliability over Burst Error Wireless Channels**  
Gang Shen, Alcatel Shanghai Bell; Liu Erwu, Alcatel Shanghai Bell Corp
- 4. Performance Analysis of Spatial Data Broadcast for Navigation Systems**  
Shou-Chih Lo, Dong Hwa University
- 5. Database Correlation Method for Multi-System Positioning**  
Paul Kemppi, Sami Nousiainen, VTT Information Technology

Wednesday 10 May 08:30 - 10:10 Grosvenor

### 8C: IP Networks

Chair: G.S. Kuo, NCCU, Taiwan

- 1. HarMoNy - HIP Mobile Networks**  
Stephen Herbom, Luke Haslett, University of New South Wales; Roksana Boreli, Aruna Seneviratne, National ICT Australia
- 2. A Novel Version of Wireless TCP for Vehicular On-Board IP Networks**  
Bhaskar Sardar, West Bengal University of Technology; pankaj Chand, Heritage Institute of Technology; Debashis Saha, IIM Calcutta
- 3. Terminal-Centric Location Services for the IP Multimedia Subsystem**  
Joachim Fabini, Vienna University of Technology; Rudolf Pailer, Mobilkom Austria AG & Co KG; Marco Happenhofer, Vienna University of Technology

- 4. Fast and Reliable Route Discovery Protocol Considering Mobility in Multihop Cellular Networks**  
Hyun-Ho Choi, Dong-Ho Cho, KAIST
- 5. On Packet Aggregation Mechanisms for Improving VoIP Quality in Mesh Networks**  
Kyungtae Kim, Samrat Ganguly, Rauf Izmailov, NEC Laboratories America; Sangjin Hong, SUNY Stonybrook
- 6. Implementation of a Multihoming Agent for Mobile On-board Communication**  
Jun Yao, University of New South Wales; Kun-chan Lan, National ICT Australia; Yi Duan, Jianyu Pan, University of New South Wales

Wednesday 10 May 08:30 - 10:10 Connaught

### 8D: IEEE 802.11 Adhoc Networks

Chair: Jamil Khan, University of Newcastle, Australia

- 1. A QoS Scheme for Streaming Applications in 802.11b Ad Hoc Networks**  
Chiara Taddia, Alessandra Giovanardi, Gianluca Mazzini, University of Ferrara
- 2. A Randomized Power Management Protocol with Dynamic Listen Interval for Wireless Ad Hoc Networks**  
Zi-Tsan Chou, Institute for Information Industry
- 3. An Improved IEEE802.11 PSM Based on Server Vacation Models**  
KaMing Lau, OnChing Yue, The Chinese University of Hong Kong
- 4. Enhancing IEEE802.11 DCF using Genetic Programming**  
Tim Lewis, Neil Fanning, Gary Clemo, Toshiba Research Europe Ltd.
- 5. A Non-Linear Dynamic Tuning of the Minimum Contention Window (CWmin) for Enhanced Service Differentiation in IEEE 802.11 Ad-Hoc Networks**  
Lassaad Gannoune, EIVD
- 6. Impact of Multi-Antenna on the Performance of the Ad-Hoc WLAN in a Slow Rayleigh Fading Channel**  
Vahid Pourahmadi, University of Tehran; S. Hamidreza Jamali, University of Waterloo; Reza Safavi-Naeeni, Iran Communications Industries Inc.

Wednesday 10 May 08:30 - 10:10 Mayfair 1

### 8E: Beamforming

Chair: Antonio Forenza, The University of Texas at Austin, USA

- 1. Experimental Evaluation of Eigenvector Beamforming Method with 8X4 MIMO-OFDM Testbed**  
Riichi Kudo, Kentaro Nishimori, Yasushi Takatori, Koichi Tsunekawa, NTT
- 2. Combining Eigen-Beamforming and Cyclic Delay Diversity for Correlated MISO Channels with Block-Iterative GDFE Receiver**  
Wing Seng Leon, Ying-Chang Liang, Yonghong Zeng, Changlong Xu, Institute for Infocomm Research
- 3. Efficient Feedback of the Channel Information for Closedloop Beamforming in WLAN**  
Joonsuk Kim, Carlos Aldana, Broadcom Corp
- 4. Minimax Problems and Directional Derivatives for MIMO Channels**  
Anke Feiten, Rudolf Mathar, RWTH Aachen University



5. **Adaptive Minimum Symbol Error Rate Beamforming Assisted Receiver for Quadrature Amplitude Modulation Systems**  
Sheng Chen, H-Q. Du, Lajos Hanzo, University of Southampton
6. **Efficient Receive Antenna Selection Algorithms and Framework for Transmit Zero-forcing Beamforming**  
Boon Chin Lim, Christian Schlegel, Witold Krzymien, University of Alberta

Wednesday 10 May 08:30 - 10:10 Mayfair 2

### 8F: Synchronization 2

Chair: Marco Villanti, University of Bologna, Italy

1. **Initial and Post-Initial Acquisition in the Serial Search Based Noncoherent Multiple Transmit/Receive Antenna Aided DS-CDMA Downlink**  
Seung-Hwan Won, Lajos Hanzo, University of Southampton
2. **Inter-Symbol Interference Aware Frame Synchronization**  
Raffaella Pedone, Marco Villanti, Giovanni E. Corazza, University of Bologna
3. **Sign Bit Chip Correlation MMSE Receiver with Multipath Interference Correlative Timing for DS-CDMA systems**  
Tsuyoshi Hasegawa, Masahiko Shimizu, Fujitsu Laboratories Ltd.
4. **Comparison of DCSK receiver and Enhanced DCSK Receiver with Synchronization Error**  
Yungil Kim, Jaehwan Kim, Joonhyuk Kang, Information and Communications University; Jaehyun Kim, Samsung Advanced Institute of Technology
5. **Adding UP for Frame Synchronization**  
Marco Villanti, Matteo Lubatti, Alessandro Vanelli-Coralli, Giovanni E. Corazza, University of Bologna

Wednesday 10 May 08:30 - 10:10 Mayfair 3

### 8G: Implementation 2

Chair: Boyd Murray, CSIRO, Australia

1. **An Low Complexity Hardware Implementation of MIMO Detector with Application to WLAN**  
Chanho Yoon, Eunyoung Choi, Jungbo Son, Sok-Kyu Lee, Electronics and Telecommunications Research Institute; Taehyun Jeon, Seoul National University of Technology
2. **Efficient Polynomial Interpolation Filters with Symmetric Coefficients**  
Joon Tae Kim, Konkuk University
3. **Ultra Low-Power Digital Demodulators for Short Range Applications**  
Mehmet Yuce, University of Newcastle; Ahmet Tekin, Multigig Inc.
4. **Indoor Experiments of an E-SDM Testbed with Channel Prediction**  
Toshihiko Nishimura, Yasuo Hata, Takeo Ohgane, Yasutaka Ogawa, Hokkaido University
5. **Joint Adaptive Compensation for Amplifier Nonlinearity and Quadrature Modulation Errors**  
Young-Doo Kim, Eui-Rim Jeong, Korea Advanced Institute of Science and Technology (KAIST); Taegyun Noh, Electronics and Telecommunications Research Institute (ETRI); Yong Hoon Lee, Korea Advanced Institute of Science and Technology (KAIST)
6. **Coded MIMO Using Interblock Memory**  
Chung-Li Wang, National Taiwan University; Chia-Jung Yeh, Yen-Kai Chen, Mao-Chao Lin, National Taiwan University

Wednesday 10 May 08:30 - 10:10 Lumina

### 8H: Propagation 4

Chair: Matthias Pätzold, Agder University College, Norway

1. **Validity of the Kronecker Model for MIMO Correlated Channels**  
Claude Oestges, Université Catholique de Louvain
2. **Model Selection and Estimation for Lognormal Sums in Pearson's Framework**  
Q.T. Zhang, S. H. Song, City University of Hong Kong
3. **Least Squares Quadratic (LSQ) Approximation to Lognormal Sum Distributions**  
Lian Zhao, Ryerson University; Jiu Ding, The University of Southern Mississippi
4. **A Stochastic MIMO Model Utilising Spatial Dimensionality and Modes**  
Glenn Dickins, Terence Betlehem, Australian National University; Leif Hanlen, National ICT Australia
5. **Average Level Crossing Rates and Average Fade Durations of Multi-Branch Selection Diversity over Dependent Weibull Fading Channels**  
Yawgeng Chau, Karl Yung-Ta Huang, Yuan Ze University
6. **Shadow Fading Revisited**  
Jari Salo, Lasse Vuokko, Hassan M. El-Sallabi, Pertti Vainikainen, Helsinki University of Technology

Wednesday 10 May 08:30 - 10:10 Pre-Function Area

### 8P: Future Wireless Posters

1. **Higher Order Modulations and GSM/EDGE Radio Access Network Evolution**  
David Navratil, Nokia
2. **Uplink Performance Analysis for a Relay Based Cellular System**  
Dharmayashdev Rai Basgeet, Toshiba Research Europe Ltd; Yuk Chow, Toshiba Research Europe Limited
3. **The 3G Long-Term Evolution – Radio Interface Concepts and Performance Evaluation**  
Erik Dahlman, Hannes Ekström, Anders Furuskär, Ylva Jading, Jonas Karlsson, Magnus Lundevall, Stefan Parkvall, Ericsson Research
4. **Adaptive MIMO OFDMA for Future Generation Cellular Systems in a Realistic Outdoor Environment**  
Congzheng Han, Angela Doufexi, Simon Armour, Kah Heng Ng, Joe McGeehan, University of Bristol
5. **Application of Functional Unit Networks to Next Generation Radio Networks**  
Marc Schinnenburg, Fabian Debus, Ralf Pabst, RWTH Aachen University
6. **Load balancing oriented Spectrum Management for UMTS Networks operating in Adaptive B3G Environments**  
Panagiotis Demestichas, Kostas Tsagkaris, George Dimitrakopoulos, University of Piraeus
7. **Performance Comparison Between Fast Sector Selection and Simultaneous Transmission with Soft-Combining for Intra-Node B Macro Diversity in Downlink OFDM Radio Access**  
Akihito Morimoto, Kenichi Higuchi, Mamoru Sawahashi, NTT DoCoMo, Inc.
8. **Sharing your Urban Residential WiFi (URWiFi)**  
Santosh Kawade, Viraj Abhayawardhana, British Telecom; Dave Wisely, BT

**9. Switched Multi-Radio Transmission Diversity for Non-Collocated Radio Accesses**

Reza Karimi, Bell Labs; Konstantinos Dimou, Panasonic R&D Centre Germany; George Koudouridis, Peter Karlsson, TeliaSonera

**10. Multi-mode Access System with Anchor Layer 2/3 Protocol for Beyond 3G Wireless Networks**

Mo-Han Fong, Nortel Networks / University of Victoria; Aaron Gulliver, University of Victoria; Vijay K. Bhargava, University of British Columbia

**11. A Study on Common-Control Channel Construction for Sub-Carrier Selecting MC-CDMA Systems**

Atsushi Nagate, BB Mobile; Teruya Fujii, Japan Telecom

**12. On the Theoretical Analysis of Optimal Cellular Systems Design with Multi-user Detection in Slow Flat Fading Channel - Uplink Analysis**

Sin Chun Yin, Vincent K.N. Lau, Hong Kong University of Science and Technology

**13. Store-and-Forward Performance in a Disruption Tolerant Network**

Mooi Choo Chuah, Peng Yang, Brian D. Davison, Liang Cheng, Lehigh University

**14. Implementation of an Improved Clock Frequency Offset Compensator for 4G OFDM System at ETRI**

Dae Soon Cho, ETRI

**15. Functional Architecture of End-to-End Reconfigurable Systems**

Klaus Moessner, University of Surrey; Jijun Luo, Eiman Mohyeldin, Siemens AG; David Grandblaise, Motorola Labs; Clemens Kloeck, Ihan Martoyo, University of Karlsruhe; Oriol Sallent, Universitat Politecnica de Catalunya; George Dimitrakopoulos, Panagiotis Demestichas, Kostas Tsagkaris, University of Piraeus; Nikolas Olaziregi, King's College London

*Wednesday 10 May 10:40 - 12:20 Kensington*

**9A: Future Wireless MIMO/OFDM Systems Analysis**

*Chair: Ashish Pandharipande, Samsung Advanced Institute of Technology, Korea*

**1. Intra-Node B Orthogonal Common Pilot Channel for OFDM Radio Access in Evolved UTRA Downlink**

Yoshihisa Kishiyama, Kenichi Higuchi, Mamoru Sawahashi, NTT DoCoMo, Inc.

**2. Optimum Resource Block Bandwidth for Frequency Domain Channel-Dependent Scheduling in Evolved UTRA Downlink OFDM Radio Access**

Satoshi Nagata, Yoshiaki Ofuji, Kenichi Higuchi, Mamoru Sawahashi, NTT DoCoMo, Inc.

**3. Adaptive Pilot-Embedded Data-Bearing Approach Channel Estimation in Space-Frequency Coded MIMO-OFDM Systems**

Chaiyod Pirak, University of Maryland College Park & Chulalongkorn University; Z. Jane Wang, University of British Columbia; K. J. Ray Liu, University of Maryland College Park; Somchai Jitapunkul, Chulalongkorn University

**4. Performance of an Adaptive Multiuser OFDM Uplink with Carrier Frequency Offsets**

Wei Wang, Tommy Svensson, Tony Ottosson, Chalmers University of Technology

**5. Iterative Joint Channel Estimation and Symbol Detection for Multi-User MIMO OFDM**

Ming Jiang, Jos Akhtman, University of Southampton; Feng Guo, Alcatel Shanghai Bell; Lajos Hanzo, University of Southampton

**6. Semi-blind Channel Estimation for OFDM Systems**

Weiwei Yang, Yueming Cai, PLA University of Science and Technology; Youyun Xu, Institute of Communications Engineering of PLAUST

*Wednesday 10 May 10:40 - 12:20 Bristol*

**9B: Ad-hoc Networks 4: Capacity & Routing**

*Chair: Sverrir Olafsson, BT Research, UK*

**1. Distance-Weighted Throughput for Multi-Antenna Wireless Networks with Multi-User Links**

Christian B. Peel, A. Lee Swindlehurst, Brigham Young University

**2. Analysis of Capacity for Spatial TDMA in Wireless Ad Hoc Networks with Variable Power and Rate Control**

Oscar Somarriba, Royal Institute of Technology (KTH)

**3. Capacity Improvement of Wireless Ad Hoc Networks with Directional Antennae**

Jialiang Zhang, Soung Chang Liew, The Chinese University of Hong Kong

**4. Improving Performance of On-demand Routing under Multipath Fading**

Suhua Tang, Masahiro Watanabe, Naoto Kadowaki, Sadao Obana, Advanced Telecommunications Research Institute International

**5. An Overlay Multicast Mechanism Using Single-hop Clustering and Tree Division for Mobile Ad hoc Networks**

Younghwan Choi, Bongsoo Kim, Kwansoo Jung, Hochoong Cho, Sang-Ha Kim, Chungnam National University

**6. Power Aware Routing Protocols for Wide Area Ad Hoc Networks**

Kaveh Ghaboosi, Babak H. Khalaj, Sharif University of Technology

*Wednesday 10 May 10:40 - 12:20 Grosvenor*

**9C: Handover 2**

*Chair: Iiti Saha Misra, Jadavpur University, India*

**1. A Seamless Handoff Scheme for Mobile IP**

Jinfang Zhou, Ni Sun, Zhejiang University

**2. Adaptive Handoff Using Distance Information**

Huamin Zhu, Kyungsup Kwak, Inha University

**3. Handover Latency Reduction on Host-based Mobility in Multihomed Networks**

Hiroyuki Koga, National Institute of Information and Communications Technology; Katsuyoshi Iida, Tokyo Institute of Technology; Hiroaki Haraguchi, Yaskawa Information Systems Corporation; Yuji Oie, Kyushu Institute of Technology

**4. WCDMA Downlink Load Sharing with Dynamic Control of Soft Handover Parameters**

Ridha Nasri, Zwi Altman, Hervé Dobreil, Zakaria Nouir, France Telecom R&D

**5. Comparison between Vertical Handoff Decision Algorithms for Heterogeneous Wireless Networks**

Enrique Stevens-Navarro, Vincent W.S. Wong, University of British Columbia

Wednesday 10 May 10:40 - 12:20 Connaught

**9D: Wireless LAN Performance**

Chair: Abraham O. Fapojuwo, University of Calgary, Canada

- 1. A Buffer Time based Call Admission Control Algorithm for Real-time Traffic in IEEE 802.11e WLAN**  
Yuan-Hwai Shih, Ching-Yao Huang, National Chiao Tung University
- 2. Bundled Virtual Circuit: A Proposed Cross Layer Design of Routing and Scheduling for QoS Services in MANETs**  
Choon Lim Gwee, Republic Polytechnic; Yang Qin, Nanyang Technological University; Winston K. G. Seah, Institute for Infocomm Research
- 3. EDCA Based Congestion Control for WLAN Mesh Networks**  
Akira Yamada, Atsushi Fujiwara, NTT DoCoMo; L. Lily Yang, Bahareh Sadeghi, Intel Corp.
- 4. Cross-Layer Enhancement for WLAN Systems based on a Distributed Queuing MAC protocol**  
Christos Verikoukis, Jesus Alonso, CTTC; Luis Alonso, Elli Kartsakli, Alex Cateura, UPC
- 5. Performance Analysis of IEEE802.11e WLANs with Throughput and Delay Guarantees**  
Jiang Zhu, National University of Defence Technology; Abraham Fapojuwo, University of Calgary

Wednesday 10 May 10:40 - 12:20 Mayfair 1

**9E: Space-Time Coding 2**

Chair: Jinhong Yuan, The University of New South Wales, Australia

- 1. Multi-Chip Differential Space-Time Block Coding for DS-CDMA**  
Shun Cheung, Robert Schober, University of British Columbia
- 2. A New Block-Wise Adaptive Bit and Power Allocation Algorithm in V-BLAST System**  
Jun Ma, Wuyang Zhou, University of Science and Technology of China
- 3. Low Complexity Maximum-Likelihood Decoder for VBLAST-STBC scheme in MIMO Wireless Communication Systems**  
Van-Su Pham, Information and Communications University
- 4. Performance Analysis of the Differential Space-Time Modulation in Time-Varying Rayleigh Fading Channels**  
Van Khanh Nguyen, Deakin University
- 5. Uplink Capacity of Cellular Systems using Space-Time Block Codes with Power Control**  
Zhuo Wu, Alister Burr, University of York
- 6. Rate 2 Quasi-Orthogonal Space Time Block Codes using Parallel Interference Cancellation**  
Nicholas Pau, Desmond P Taylor, Philippa A. Martin, University of Canterbury

Wednesday 10 May 10:40 - 12:20 Mayfair 2

**9F: Equalization 1**

Chair: Geoffrey Y. Li, Georgia Tech, USA

- 1. Novel Techniques to minimize the Error Propagation of Decision Feedback Equalizer in 8VSB DTV System**  
Baek Jong Seob, Yonsei University; SungWoo Park, Samsung Electronics Co.Ltd; Jong-Soo Seo, Yonsei University

**2. Blind IIR Channel Equalization Based on Second-Order Statistics**

Fangjiong Chen, South China University of Technology; Sam Kwong, City University of Hong Kong; Wenfei Nie, Gang Wei, Fei Ji, South China University of Technology

**3. Inter-symbol Interference Suppression Scheme using Periodic Signal Waveform for Fixed-rate COFDM Systems**

Fumiaki Maehara, Fumio Takahata, Waseda University

**4. Chip-level Channel Equalization with Rake-like Structures for Multicode Downlink WCDMA Communications**

Lahouari Fathi, France Telecom R&D; Geneviève Jourdain, LIS-INPG, Grenoble France; Marilyn Arndt, France Telecom R&D

**5. Iterative Equalization and Source Decoding for Vector Quantization Sources**

Lie-Liang Yang, University of Southampton

**6. Improved Scheme for Energy Spreading Transform based Equalization**

Taewon Hwang, Geoffrey Y. Li, Georgia Tech

Wednesday 10 May 10:40 - 12:20 Mayfair 3

**9G: Ultra-Wideband Systems 3**

Chair: Aaron Gulliver, University of Victoria, Canada

**1. Diagonally Loaded Linear MMSE Equalization for UWB Multipath Channel Under Limited Training Sample Support**

Lin Zhiwei, Institute for Infocomm Research; A. B. Premkumar, A.S. Madhukumar, Nanyang Technological University; Francois Chin, Institute for Infocomm Research

**2. Sparsity-driven Multiple Access Ultra-Wideband Signal Detection**

Wei Li, Aaron Gulliver, University of Victoria

**3. Interference Resistant Adaptive Threshold Acquisition Algorithm for DS-UWB Systems**

Jun Chen, Zheng Zhou, Beijing University of Posts and Telecommunications

**4. Maximum Likelihood Frequency Offset Estimation & Cramer Rao Bound for Ultra-Wideband (UWB) Multi-Band OFDM systems**

Chin Wee Yak, National University of Singapore; Zhongding Lei, Tjeng Thiang Tjhung, Institute for Infocomm Research

**5. Singular Value Decomposition-Based Algorithm for IEEE 802.11a Interference Suppression in DS-UWB and TH-PAM UWB Systems**

Shaoyi Xu, Zhiqian Bai, Qinghai Yang, Kyungsup Kwak, Inha University

Wednesday 10 May 10:40 - 12:20 Lumina

**9H: Multiple Antennas & MIMO 2**

Chair: Mark Beach, University of Bristol, UK

**1. An Enhanced Space-time Equalizer for MIMO Multi-code CDMA Systems**

Xiaoxia Zhang, Byoung-Hoon Kim, Qualcomm; Manuel Flury, EPFL, CH

**2. Measurement of Time-Varying MIMO Channel for Performance Analysis of Closed-Loop Transmission**

Kei Mizutani, Kei Sakaguchi, Jun-ichi Takada, Kiyomichi Araki, Tokyo Institute of Technology

**3. Personal Area Networks with Line-of-Sight MIMO Operation**

Dries Neiryneck, Chris Williams, Andrew Nix, Mark Beach, University of Bristol

**4. A Simple Adaptive Channel Estimation Scheme for Multiple Antenna OFDM Systems**

Yung-Fang Chen, National Central University

**5. Performance Analysis of MIMO-OFDM Systems using Indoor Wideband MIMO Channel Measurement Data**

Khanh Tran Gia, Dung Dao Nguyen, Kei Sakaguchi, Kiyomichi Araki, Tokyo Institute of Technology; Hiroshi Iwai, Matsushita Electric Industrial Co., Ltd.

**6. Multiuser MIMO-OFDM with Adaptive Antenna and Subcarrier Allocation**

Yang Hu, Changchuan Yin, Beijing University of Posts and Telecommunications

*Wednesday 10 May 10:40 - 12:20 Pre-Function Area*

**9P: Mobile Networks Posters 3**

**1. Comparison of User Mobility Pattern Prediction Algorithms to increase Handover Trigger Accuracy**

Stefan Michaelis, Christian Wietfeld, University of Dortmund

**2. Verification of Mobility-Based Soft Handover Algorithm using WCDMA Measurements Data**

Rong-Teng Juang, Hsin-Piao Lin, Ding-Bing Lin, Wei-Cheng Zeng, National Taipei University of Technology

**3. A Dynamic Resource Reservation Scheme Designed for Improving Multicast Protocols in HMIPv6-Based Networks**

Huei-Wen Ferng, Wen-Yan Kao, National Taiwan University of Science and Technology; Jeng-Ji Huang, National Taiwan Normal University; David Shiung, MediaTek Inc., TW

**4. A Fast Handoff Mechanism for IEEE 802.11 and IAPP Networks**

Ping-Jung Huang, Industrial Technology Research Institute; Yu-Chee Tseng, National Chiao-Tung University, Taiwan; Kun-Cheng Tsai, Networks and Multimedia Research Institute, Institute for Information Industry

**5. Preserving Streaming Video Quality in Mobile Wireless LAN networks**

Tom Van Leeuwen, Ingrid Moerman, Piet Demeester, Ghent University

**6. Cell Capacity of CDMA Networks Taking the Effect of User Locations into Consideration**

Yong Huat Chew, Institute for Infocomm Research; Jiakai Tham, National University of Singapore; Boon Sain Yeo, Institute for Infocomm Research

**7. Comparison of Probabilistic Models used for Diagnosis in Cellular Networks**

Raquel Barco, University of Málaga; Volker Wille, Nokia Networks; Luis Diez, Pedro Lázaro, University of Málaga

**8. Impact of Heterogenous Wireless Link Characteristics on the Performance of IP-based Group Communications**

Joern Seger, Christian Wietfeld, University of Dortmund

**9. On the Suitability of the Short Message Service for Emergency Warning Systems**

Rastin Pries, Tobias Hossfeld, Phuoc Tran-Gia, University of Wuerzburg

**10. Cooperation Techniques and Architecture for Multi-access Radio Resource Management**

FENG Zhiyong, Beijing University of Posts and Telecommunications

**11. Adaptive Beacon Control in a heterogeneous System Environment**

Matthias Siebert, Daniel Bültmann, Communication Networks, RWTH Aachen University; Eiman Mohyeldin, Siemens AG

**12. Throughput of Wireless TCP Networks using Reliable Radio Links**

Jose Marcos Camara Brito, Bruno Couto Costa Pinto, National Institute of Telecommunications

**13. Study the Traffic Difference of Online Games between GPRS/EGPRS and ADSL Networks**

Yi Wu, Hui Huang, Dongmei Zhang, Nokia Research Center, Beijing

**14. A General Framework for Context Transfer in Mobile IP Networks**

Ha Duong, Arek Dadej, Steven Gordon, University of South Australia

*Wednesday 10 May 13:50 - 15:30 Kensington*

**10A: Future Wireless PHY/MAC 2**

*Chair: Uma S. Jha, Qualcomm, USA*

**1. Coverage Study for VoIP over Enhanced Uplink**

Fan Rui, Fredrik Persson F, Mats Nordberg, Stefan Wänstedt, Ericsson Research; Miao Qingyu, Gu Xinyu, Ericsson China

**2. New Pulse Shapes for CPM Signals**

Enis Doyuran, ASELSAN Inc.; Yalcin Tanik, Middle East Technical University

**3. A Novel Adaptive SR-SW-ARQ/FEC Scheme for the Mobile Network with Ultra Low-Latency**

Xiaoqiu Wang, Satoshi Konishi, Takeshi Kitahara, Hajime Nakamura, KDDI R&D Laboratories Inc.

**4. Integration of Spatial Processing in the WINNER B3G Air Interface Design**

Martin Döttling, Siemens AG; Mikael Sternad, Uppsala University; Göran Klang, Ericsson AB; Joern von Haefen, Siemens AG; Magnus Olsson, Ericsson Research

**5. Multiband Frequency Hopping For High Data-rate Communications with Adaptive Use of Spectrum**

Phil Vigneron, Colin Brown, Communications Research Centre Canada

*Wednesday 10 May 13:50 - 15:30 Bristol*

**10B: Sensor Networks 3**

*Chair: Mischa Dohler, France Telecom*

**1. Simulated Annealing based Wireless Sensor Network Localization with Flip Ambiguity Mitigation**

Anushiya A Kannan, Guoqiang Mao, Branka Vucetic, University of Sydney

**2. Enhanced Time-Sync Protocol for Embedded Sensor Networks**

Kee-Young Shin, Kang Yong Lee, Electronics and Telecommunications Research Institute

**3. Energy-Aware Distributed Topology Control for Coverage-Time Optimization in Clustering-Based Heterogeneous Sensor Networks**

Joongheon Kim, LG Electronics Inc.; Jihoon Choi, Wonjun Lee, Korea University

**4. Statistical Edge Detection with Distributed Sensors under the Neyman-Pearson (NP) Optimality**

Pei-Kai Liao, University of Southern California; Min-Kuan Chang, National Chung Hsing University; C.-C. Jay Kuo, University of Southern California

**5. On the Sensitivity of Sensor Network Simulations**

Tuan Le, University of New South Wales

- 6. Distributed Estimation in a Power Constrained Sensor Network**  
Visvakumar Aravinthan, Sudharman K. Jayaweera, Kossai Al Tarazi, Wichita State University

*Wednesday 10 May 13:50 - 15:30 Grosvenor*

**10C: Location & Mobility 2**

*Chair: Milosh Ivanovich, Telstra, Australia*

- 1. Hybrid SADOA/TDOA Location Estimation Scheme for Wireless Communication Systems**  
Rong-Terng Juang, Ding-Bing Lin, Hsin-Piao Lin, National Taipei University of Technology
- 2. Hybrid TDOA/AOA Indoor Positioning and Tracking Using Extended Kalman Filters**  
Chin-Der Wann, Yi-Jing Yeh, Chih-Sheng Hsueh, National Sun Yat-Sen University
- 3. A Fuzzy Distance-Based Location Management Scheme for PCS Networks**  
Yihua Zhu, Zhejiang University of Technology; Victor Leung, University of British Columbia
- 4. Location-Dependent Parameterization of a Random Direction Mobility Model**  
Bernd Gloss, Michael Scharf, Daniel Neubauer, University of Stuttgart, IKR
- 5. Dynamic Point Forwarding Scheme for QoS-aware Mobility in Future All-IP Wireless Networks**  
Hui-Juan Yao, Beijing University of Posts and Telecommunications; G.S. Kuo, NCCU
- 6. Positioning of Mobile Terminals based on Feature Extraction from Channel Impulse Responses**  
Michael Layh, Ulrich Reiser, Dirk Zimmermann, University of Stuttgart

*Wednesday 10 May 13:50 - 15:30 Connaught*

**10D: Bluetooth/IEEE 802.15**

*Chair: Victor C. M. Leung, The University of British Columbia, Canada*

- 1. Improved Channel Classification and Scheduling for Non-collaborative Bluetooth/WLAN Coexistence**  
Qixiang Pang, Victor Leung, University of British Columbia
- 2. IEEE 802.15.4 Simulation Module in Network Simulator GTNetS**  
Liang Cheng, Georgia State University; Xin Zhang, Georgia Institute of Technology; Anu G, Bourgeois, Georgia State University
- 3. ECAP: An Enhancement of the IEEE 802.15.3 MAC via Novel Scheduling Scheme**  
Ji Eun Kim, Young Ae Jeon, ETRI
- 4. An Application-aware Delayed-ACK for Video Streaming over IEEE 802.15.3 WPANs**  
Wei Yu, Liu Xingjie, Tsinghua University; Yu, Cai; Zhou Zucheng, Tsinghua University
- 5. P-Frozen Contention Strategy (PFCS) for Solving Collision Chain Problem in IEEE 802.15.4 WPANs**  
Shiann-Tsong Sheu, National Central University; Yun-Yen Shih, Tamkang University

*Wednesday 10 May 13:50 - 15:30 Mayfair 1*

**10E: Low-Density Parity Check Coding**

*Chair: Sarah Johnson, University of Newcastle, Australia*

- 1. Low-Density Parity-Check Coded Distributed Space-Time Cooperative System**  
Bo Dong, Lin Xie, Peiliang Qiu, Zhejiang University; Qinru Qiu, State University of New York, Binghamton

- 2. On the Performance of LDPC Codes with Differential Detection over Rayleigh Fading Channels**  
Hiroshi Tatsunami, Koji Ishibashi, Hideki Ochiai, Yokohama National University

- 3. Fast Convergence Algorithm for LDPC Codes**  
Frank Kienle, Timo Lehnigk-Emden, Norbert Wehn, University of Kaiserslautern

- 4. Generalized Low-Density Parity-Check Coding Aided Multilevel Codes**  
Ronald Tee, Fang-Chun Kuo, Lajos Hanzo, University of Southampton

- 5. High Performance Simplified LDPC Decoder without Knowledge of Multi-path Rayleigh Channel**  
Tsuguo Maru, NEC Corporation

- 6. Random Coding Union Bounds for LDPC Coded MIMO Systems**  
Jingqiao Zhang, Heung-No Lee, University of Pittsburgh

*Wednesday 10 May 13:50 - 15:30 Mayfair 2*

**10F: Equalization 2**

*Chair: Tomohiko Taniguchi, Fujitsu Laboratories, Japan*

- 1. Chip Level Equalization for DS-CDMA Systems using Iterative Pilot Signals Enhancement**  
Wing Seng Leon, Ying-Chang Liang, Institute for Infocomm Research
- 2. Frequency-Domain Pre-Equalization for Single-Carrier Space-Division Multiple-Access Downlink Transmissions**  
Michele Morelli, University of Pisa; Man-On Pun, C.-C. Jay Kuo, University of Southern California
- 3. Fast Algorithm for Decision Feedback Equalization in Multiple Input Multiple Output Channel**  
Wenjie Jiang, Yusuke Asai, Takeshi Onizawa, Satoru Aikawa, Nippon Telegraph and Telephone Corporation
- 4. Evaluation of New NLMS and RLS Chip Equalizers using Tentative Decision Data for HSDPA Systems**  
Daisuke Ogawa, Takashi Dateki, Hideto Furukawa, Fujitsu Laboratories Ltd.
- 5. A Criterion for Adaptive Rake/Equalizer Configuration of Mobile Receivers**  
Eric Hardouin, Jean-Marie Chaufray, France Telecom
- 6. Channel Equalization in HSDPA Receivers: Trade-off between Performance and Complexity with a Variable Oversampling**  
Marcus Schämamm, Ruhr-Universität Bochum; Martin Bückner, Nokia Research Center Bochum; Sebastian Hessel, Ulrich Langmann, Ruhr-Universität Bochum

*Wednesday 10 May 13:50 - 15:30 Mayfair 3*

**10G: Hybrid ARQ**

*Chair: Hans-Juergen Zepernick, Blekinge Institute of Technology, Sweden*

- 1. Payload Length and Rate Adaptation for Throughput Optimization in Wireless LANs**  
Sayantan Choudhury, Jerry D. Gibson, University of California, Santa Barbara
- 2. A Scheduling Scheme under a Ratio Constraint for the Multiuser MIMO Systems**  
Jiwon Kang, Hakju Lee, Chungyong Lee, Young Yong Kim, Yonsei University

**3. Call Admission Control with Adaptive Active Link Protection for Wireless Systems**

Eric Chin, Moh Lim Sim, BT Group; Sverrir Olafsson, BT Research

**4. Time Slot Allocation Based on Region and Time Partitioning for Dynamic TDD-OFDM Systems**

Hee-Jeong Chung, Miran Kim, Nak-Myeong Kim, Ewha Womans University; Sangboh Yun, Samsung Advanced Institute of Technology

**5. Enhanced Rate Adaptive Resource Allocation Scheme in Downlink OFDMA System**

Junhong Hui, Yongxing Zhou, Samsung Electronics

**6. Adaptive Frame Switching for UMTS UL-EDCH - Ping-Pong Avoidance**

Teck Hu, Siemens Communications; Shupeng Li, Fang-Chen Cheng, Yifei Yuan, Lucent Technologies

*Wednesday 10 May 13:50 - 15:30 Lumina*

**10H: Propagation 5**

*Chair: Claude Oestges, Université Catholique de Louvain, Belgium*

**1. Modelling the General Dependency between Directions of Arrival and Departure for an Indoor MIMO Channel**

Tan Chor Min, Eric Chin, Moh Lim Sim, BT Group; Mark Beach, University of Bristol

**2. Wave Propagation Inside and Around Vehicles in Dynamic Time Variant Scenarios**

René Wahl, Gerd Wölfle, AWE Communications GmbH; Philipp Wertz, University of Stuttgart, Institute of Radio Frequency Technology

**3. Effect of Bandwidth and Antenna Directivity on the Range Estimation Accuracy in a Multipath Environment**

Zunnoor Tarique, Wasim Q. Malik, David J. Edwards, University of Oxford

**4. A Space-time Channel Simulator using Angular Power Distributions**

Terence Betlehem, Thushara Abhayapala, Australian National University

**5. Comparison and Evaluation of ITU-R Recommendation P.1546 Versions**

Erik Ostlin, Western Australian Telecommunications Research Institute; Hajime Suzuki, CSIRO; Hans-Jürgen Zepernick, Blekinge Institute of Technology

**6. Path Loss Models for Air-to-Ground Radio Channels in Urban Environments**

Qixing Feng, Joe McGeehan, Eustace K. Tameh, Andrew R. Nix, University of Bristol

*Wednesday 10 May 13:50 - 15:30 Pre-Function Area*

**10P: Antennas and Propagation Posters**

**1. On Spectral Efficiency in Spatially Clustered MIMO Radio Channels**

Juha Ylitalo, University of Oulu

**2. Path Loss Prediction Formula for Urban and Suburban Areas for 4G Systems**

Koshiro Kitao, Ichitsubo Shinichi, NTT DoCoMo

**4. Wideband Spatial Channel Model for MIMO Systems at 5 GHz in Indoor and Outdoor Environments**

Hassan El-Sallabi, Helsinki University of Technology; Daniel S. Baum, Swiss Federal Institute of Technology Zurich; Per Zetterberg, Royal Institute of Technology; Pekka Kyösti, Elektrobit Testing Ltd; Terhi Rautiainen, Nokia Research Center; Christian Schneider, TU Ilmenau

**5. Measured Capacity Evaluation of Indoor Office MIMO Systems using Receive Antenna Selection**

Yuuta Nakaya, Ichirou Ida, Fujitsu Limited; Shinsuke Hara, Osaka University; Yasuyuki Oishi, Fujitsu Limited

**6. Transmit Antenna Selection for Linear Dispersion Codes Based on Linear Receiver**

Dan Deng, Ming Zhao, University of Science & Technology of China; Jinkang Zhu, USTC

**7. Propagation Characteristics of Distributed Transmission with Two Synchronized Transmitters**

Shigang Tang, Changyong Pan, Ke Gong, Zhixing Yang, Tsinghua University

**8. A Novel MIMO-STBC Scheme for Inter-Vehicle Communications at Intersection**

Kenji Ito, Nobuo Itoh, Katsushi Sanda, Toyota Central Research & Development Laboratories, Incorporated; Yoshio Karasawa, The University of Electro-Communications

**9. A Dual Least-Square Approach of Tuning Optimal Propagation Model for Existing 3G Radio Network**

Yi-Hua Chen, K. L. Hsieh, Oriental Institute of Technology

**10. Study for Various Array Antenna Assisted Doppler Spread Compensator with MRC Diversity of ISDB-T Receiver**

Young-Cheol, Yu, Minoru Okada, Heiichi Yamamoto, NAIST

**11. Effect of Mobile Motion on the Temporal Characteristics of the Channel**

Mohammed T Simsim, Noor M Khan, Rodica Ramer, Predrag Rapajic, University of New South Wales

*Wednesday 10 May 16:00 - 17:40 Kensington*

**11A: Performance of CDMA Networks**

*Chair: Susumu Yoshida, Kyoto University, Japan*

**1. Optimal Allocation of Reverse Link Resources in a Multi-Carrier CDMA Network**

Patrick Hosein, Huawei Technologies

**2. Evolution of Policy Control and Charging (PCC) Architecture for 3GPP Evolved System Architecture**

Victor Kueh, Mick Wilson, Fujitsu Laboratories of Europe

**3. Column-Pair Scrambled Chip-Interleaved DS-CDMA for Asynchronous Uplink**

Tetsuhiko Miyatani, Samsung Yokohama Research Institute

**4. Performance and Analysis of Pre-Filtering Techniques for MISO Downlink TDD MC-CDMA Systems**

Adão Silva, Atilio Gameiro, Instituto de Telecomunicações / University of Aveiro

**5. Performance of MMSE Multiuser Detection in Cellular DS-CDMA Systems Using Distributed Antennas**

Lie-Liang Yang, University of Southampton

Wednesday 10 May 16:00 - 17:40 Bristol

### 11B: Ad-hoc Networks 5: Routing

Chair: Tad Wysocki, University of Wollongong, Australia

- 1. Energy Efficient Route Construction Scheme with Continuous and Discrete Power Control in Ad Hoc Sensor Networks**  
Masaki Bandai, Shizuoka University; Satoshi Nakayama, NEC Corporation; Takashi Watanabe, Shizuoka University
- 2. Power-Controlled Hybrid Multicast Routing Protocol for Mobile Ad Hoc Networks**  
Wei-Hsiang Cheng, Chung-Yi Wen, Kai-Ten Feng, National Chiao Tung University
- 3. A Novel Location-fault-tolerant Geographic Routing Scheme for Wireless Ad Hoc Networks**  
Junlong Lin, Beijing University of Posts and Telecommunications; G.S. Kuo, NCCU
- 4. Energy-Efficient Virtual Backbones for Reception-Aware MANET**  
Joanne Lee, Bernard Mans, Macquarie University
- 5. A New Geographic Multipath Protocol for Ad hoc Networks to Reduce the Route Coupling Phenomenon**  
Valeria Losceri, Salvatore Marano, University of Calabria
- 6. MANETs: Routing Overhead and Reliability**  
Leif Hanlen, National ICT Australia; Roy Timo, Australian National University

Wednesday 10 May 16:00 - 17:40 Grosvenor

### 11C: Traffic Management 2

Chair: Richard Harris, Massey University, New Zealand

- 1. Utilization of an Indoor DAS for Repeater Deployment in WCDMA**  
Jakub Borkowski, Jarno Niemela, Tero Isotalo, Panu Lahdekorpi, Jukka Lempiainen, Tampere University of Technology
- 2. Enhancement of Network Planning Tool Predictions through Measurements**  
Zakaria Nour, Berna Sayrac, Benoit Fourestié, Ridha Nasri, France Telecom R&D
- 3. An Onboard ATM Switching Fabric Based on Ant Algorithm with Blocking Avoidance**  
Liping Xiao, Xuemai Gu, Liu Gongliang, Zhang Naitong, Harbin Institute of Technology
- 4. Overload Control with Removal Algorithm for Real-time Flows in Wireless Networks**  
Eunhyun Kwon, Seoggyu Kim, Jaiyong Lee, Yonsei University
- 5. Synchronisation and Timing Groups for GSM Networks**  
Maxim Gitlits, Jackson Yin, Paul Kubik, Telstra Research Laboratories

Wednesday 10 May 16:00 - 17:40 Connaught

### 11D: OFDM Wireless Access

Chair: Mehmet Yuce, University of Newcastle, Australia

- 1. The Switch-based Subcarrier Allocation Policies in Multi-service OFDM Systems**  
Heng-Yi Wu, Min-Kuan Chang, Chia-Chun Chang, National Chung Hsing University
- 2. Design and FPGA Implementation of MIMO-OFDM based WLAN Systems**  
Heejung Yu, Kyonghee Song, Kwanghyun Ryu, Yunjoo Kim, Seungwook Min, Sok-Kyu Lee, Electronics and Telecommunications Research Institute
- 3. An Analysis on Uplink OFDMA Optimality**  
Hongxiang Li, Hui Liu, University of Washington

### 4. Two-Dimensional Iterative Sampling Frequency Offset Estimation for MB-OFDM System

Khiam-Boon Png, Xiaoming Peng, Hongyi Fu, Francois Chin, Institute for Infocomm Research

### 5. Asynchronous Multi-Carrier DS-CDMA with UCHT-Based Complex Spreading Sequences

Zhenghui Gu, Shoulie Xie, Institute for Infocomm Research

Wednesday 10 May 16:00 - 17:40 Mayfair 1

### 11E: Turbo/Iterative Techniques

Chair: Lars Rasmussen, University of South Australia

- 1. A Differential Turbo Detection Aided Sphere Packing Modulated Space-Time Coding Scheme**  
Osamah Alamri, Nan Wu, Lajos Hanzo, University of Southampton
- 2. How to Obtain Good Performance by Iterative and Diversity Techniques for Uplink MC-CDMA Systems**  
Yi Yuan, Mireille Sarkiss, France Telecom R&D; Geoffrey Y. Li, Georgia Tech
- 3. An Iterative Detection Aided Unequal Error Protection Wavelet Video Scheme Using Irregular Convolutional Codes**  
A.Q. Pham, Jin Wang, Lie-Liang Yang, Lajos Hanzo, University of Southampton
- 4. Rate-compatible Shortened Turbo Product Codes**  
Dongning Feng, Jinhong Yuan, University of New South Wales; Karine Amis, ENST Bretagne
- 5. Three-Dimensional EXIT Chart Analysis of Iterative Detection Aided Coded Modulation Schemes**  
Ronald Tee, S. X. Ng, Lajos Hanzo, University of Southampton
- 6. A Parallel Processing Approach for Fast Iterative Decoding of Orthogonal Convolutional Codes**  
Yu-Cheng He, École Polytechnique de Montréal; David Haccoun, Polytechnique Montréal; Christian Cardinal, École Polytechnique de Montréal

Wednesday 10 May 16:00 - 17:40 Mayfair 2

### 11F: Interference Cancellation

Chair: Stephen McLaughlin, University of Edinburgh, UK

- 1. Iterative Joint PIC and 2D MMSE-FDE for Turbo-coded HARQ with SC-MIMO Multiplexing**  
Akinori Nakajima, Fumiyuki Adachi, Tohoku University
- 2. A Two-stage Iterative Successive Detection Algorithm for V-BLAST Code**  
Zhangsheng Xu, Jinkang Zhu, University of Science and Technology of China
- 3. Analysis of Reverse Link Capacity for Cellular CDMA Systems Employing Group Successive Interference Cancellation**  
Robert Schober, Anna-Marie, University of British Columbia; P. Takis Mathiopoulos, ISARS, National Observatory of Athens, Greece
- 4. An Inter-carrier Interference Suppression Technique Using Time-Domain Windowing for OFDM Systems**  
Chin-Liang Wang, Yu-Chih Huang, Po-Chung Shen, National Tsing Hua University
- 5. Frequency-domain Soft Interference Cancellation for Multicode CDMA Transmissions**  
Koichi Ishihara, Kazuaki Takeda, Fumiyuki Adachi, Tohoku University

- 6. A Low Complexity ICI Cancellation Method for High Mobility OFDM Systems**  
Kwanghoon Kim, Hyuncheol Park, Information and Communications University (ICU)

*Wednesday 10 May 16:00 - 17:40 Mayfair 3*

**11G: Detection 3**

*Chair: Mark Reed, National ICT Australia*

- 1. Non-recursive CPM Signal Generation and Reception with Application to SC/FDE Combined with MIMO**  
Tufik Buzid, Steffen Reinhardt, University of Erlangen-Nuremberg; Mario Huemer, University of Erlangen
- 2. Suboptimal Maximum Likelihood Detection Using Gradient-based Algorithm for MIMO Channels**  
Thet Htun Khine, Kazuhiko Fukawa, Hiroshi Suzuki, Tokyo Institute of Technology
- 3. A Burst Noise Cancellation Scheme for Single Carrier Block Transmission with Cyclic Prefix**  
Kazunori Hayashi, Hideaki Sakai, Kyoto University
- 4. On Reliability Metrics for Soft-Input Decoding in Presence of Channel Estimation Errors**  
Mustapha Benjillali, Leszek Szczecinski, INRS-EMT
- 5. A New Geometric View of the First-Order Marcum Q-Function and Some Simple Tight Erfc-Bounds**  
Pooi Yuen Kam, Rong Li, National University of Singapore
- 6. Soft Detection with Linear Precoding for Spatial Multiplexing Systems**  
Yong Li, Jaekyun Moon, University of Minnesota

*Wednesday 10 May 16:00 - 17:40 Lumina*

**11H: Smart Antennas 2**

*Chair: Jacob Gavan, Holon Academic Institute of Technology, Israel*

- 1. Direction of Arrival Detection System for Radio Surveillance: Frequency Spectrum Analysis of CDMA and Jamming Waves**  
Koichi Ichige, Mitsuharu Imai, Hiroyuki Arai, Yokohama National University; Masayuki Nakano, Masafumi Hirono, KDDI
- 2. System Performance of Fixed Beams with S-CPICH as a Phase Reference in WCDMA**  
Afif Osseiran, Ericsson Research; Andrew Logothetis, Airspan Communications; Maurizio Molteni, Ericsson
- 3. A Matrix Channel Model for Transmit and Receive Smart Antennas Systems**  
Emanuela Falletti, Fabrizio Sellone, Politecnico di Torino

- 4. A Novel Blind Space-Time Multiuser Detector for DS-CDMA Communication System**  
Anmin Kong, Chunru Wan, Nanyang Technological University

- 5. Joint DOA-Frequency Offset Estimation and Data Detection in Uplink MIMO-OFDM Networks with SDMA Techniques**

Kuo-Hsiung Wu, De-Lin Institute of Technology; Wen-Hsien Fang, National Taiwan University of Science and Technology; Jiunn-Tsair Chen, National Tsing-Hua University

*Wednesday 10 May 16:00 - 17:40 Pre-Function Area*

**11P: Transmission Technology Posters 4; Satellite Systems & Networks Posters**

- 1. Cooperative Relaying Based on Alamouti Diversity under Aggregate Relay Power Constraints**  
Hu Rong, Zhang Zhang, Ericsson Research (Beijing); Peter Larsson, Ericsson Research
- 2. Power Allocation and Feedback Reduction for MIMO-OFDMA Opportunistic Beamforming**  
Issam Toufik, Eurecom Institute; Marios Kountouris, Eurecom France
- 3. Sufficient Conditions for Convergent Power Dynamics in Ad Hoc Networks**  
Sverrir Olafsson, BT Research
- 4. Generalized Performance Analysis of Adaptive PSAM-Based Transmit-Beamforming for Wireless MIMO systems**  
Amine Maaref, Sonia Aissa, University of Quebec, INRS-EMT
- 5. Precoder design for DSTM based on Statistical Information of the Fading Channels**  
Van Khanh Nguyen, Deakin University
- 6. Iterative Phase Offset Estimation for Mobile Broadband Satellite Internet Systems**  
Jun Heo, Konkuk University
- 7. System architecture for C band mobile Satcom application**  
Liu Gang, Rajanik, ST Electronics (Satcom and Sensor)
- 8. Performance Evaluation for A closed loop power control using An Efficient Channel Estimation in SAT-CDMA**  
Byoung Gi Kim, ETRI; Cheol-Sung Kim, Chonnam National University; Do-Seob Ahn, Electronics and Telecommunications Research Institute