



*The 58th IEEE Semiannual
Vehicular Technology Conference*

Final Program



October 6-9, 2003

The Hilton in the Walt Disney World Resort

Orlando, FL

Panels

Two panels will be held on the evolution of 3G standards, and on technologies which can shape the industry beyond 3G, to allow attendees to seek the opinion of key industrial figures.

Tuesday, October 7, 19.00 – 21.00 Paradise 3

Evolution of 3G standards (HSDPA and 1xEV-DV) and their enabling technologies

Chair: Gibong Jeong, *Texas Instruments, USA*

Panelists: Young C. Yoon, *Ericsson, USA*; R. Thomas Derryberry, *Nokia Research Center, USA*; Hyeon Woo Lee, *Samsung Electronics Co., Korea*; Rob Dalgleish, *Nortel Networks, USA*; Erik Dahlman, *Ericsson, Sweden*

Many wireless operators are indeed rolling out 3G cellular networks to meet demand for data services; the cdma2000 systems has already been deployed in Asia and North America, and the WCDMA systems are gaining wider acceptance in Japan and started deployment in Europe. However, the prices for high-speed data service are still high. For inexpensive data service, the 3G systems must be evolved toward (1) increasing user data throughput and efficiency of the air interface while managing mobility in outdoor environment and (2) providing truly packet-switched air interface while allowing for concurrent services of voice and data. To address the demand, the two 3G standardization bodies responded with evolved 3G specifications, known as 1xEV-DV and HSDPA.

The 3G evolution aims at taking advantage of the interplay between physical layer technology (link adaptation and hybrid-ARQ) and MAC layer packet scheduling. However, an optimal design across physical and MAC layers opens many new system issues. To address these issues, this panel, consisting of experts in HSDPA and 1xEV-DV technologies, will discuss the following: (1) capacity and data throughput improvement: assessment methodology and predicted improvement; (2) the key enabling technologies: adaptive modulation-and-coding, hybrid-ARQ, packet scheduling, multiple antenna (multiplexing vs. diversity); (3) advanced receiver: interference cancellation, equalization; (4) radio access network technology: fast cell switching, packet routing; (5) inter-working between MAC-layer error control and link-layer error control; (6) TCP/IP over wireless packet channel, seamless roaming to/from WLAN. We expect that the discussions will give perspectives on fundamental issues and check common understanding between two different standards and between mobile and network equipment developers.

Wednesday, October 8, 19.00 – 21.00 Paradise 3

Beyond 3G –

The Future of Wireless – Fixed and Mobile Communications Technologies

Chair: William C.Y. Lee, *LinkAir Comms, Inc., USA*

Panelists: Jack Winters, *Jack Winters Communications, LLC, USA*
Anil Kripalani, *Qualcomm Inc, USA*
Neil D. Schuster, *ITS America, USA*

With the rapid growth in wireless communications technologies and applications, this panel is initiated to discuss the B3G, which includes the integration of wireless fixed and mobile communications systems, the spectrum efficiency issues, the possible variations of future CDMA systems, the integration with advanced ITS (Intelligent Transportation Systems), and the impact from Nano technologies and System-on-Chip. The five panelists will address the following topics.

- The future variations on CDMA systems (William C. Y. Lee)
- Integration of cellular systems with WLAN and Internet (Jack Winters)
- Innovations to increase capacity (Anil Kripalani)
- Wireless communications integrated with advanced ITS in the future (Neil D. Schuster)
- Impact on the future wireless communications from Nano technologies and SOC

VTC2003-Fall Technical Sessions

VTC2003-Fall in Orlando will be the biggest VTC ever in terms of papers, with over 720 papers and posters being presented over the three days of the conference. These were selected from a total of 2400 submissions, also a record for VTC. The large number of submissions meant that although we have tried to accommodate as many papers as possible, many excellent papers had to be rejected. The result, however, is a varied program of high quality contributions from across the spectrum of wireless communications and vehicular technology.

In an experiment this year, a number of symposia have been included in the program. Some of these symposia are focussed on specific areas, such as *IP Mobility*, while others, such as *Wireless Communications: 3G and Beyond* are more wide-ranging. The conference sessions have been arranged in tracks as usual, with specialist symposia appearing in the relevant track. However, take care to check the more general symposia for papers which you may find of interest, and remember that most symposia also have a corresponding poster session.

The following program is ordered by subject and symposia so you can more easily find papers you are interested in. Each conference attendee will also receive on registration a printed program in the traditional time sequence.

Working on the program has given me the privilege of a sneak preview of the papers we have in store, and I can promise you an interesting and enlightening time in Orlando. See you there!

James Irvine
Chair, VTC2003-Fall Steering Committee

Main Conference

Tuesday, October 7, 15.35 - 17.05 Salon 1

Chair: TBA

3A: Modulation and Demodulation

- 1 Performance Analysis of Digital Modulations on Weibull Fading Channels**
Julian Cheng, Chintha Tellambura, Norman C. Beaulieu,
University of Alberta, Canada
- 2 A New Equalization Algorithm based on Minimizing Error Negentropy**
Sooyong Choi, Te-Won Lee, University of California San Diego,
USA
- 3 Rotated Multidimensional Modulation for Spatial Multiplexing Systems**
Soo Ki Choi, Seung Young Park, Chung Gu Kang, Korea
University, Korea
- 4 Unequal Bit-Error Protection in Coherent M-ary PSK**
Johan Lassing, Erik Strom, Erik Agrell, Tony Ottosson, Chalmers
University of Technology, Sweden
- 5 Spectral Regrowth Reduction for CCSDS 8-D 8-PSK TCM**
Deva K. Borah, New Mexico State University, USA
- 6 Effect of Delay Commands on Adaptive Modulation Scheme in Fading Channel**
Adrian Boariu, Nokia Research Center, USA

Wednesday, October 8, 16.00 - 17.45 Salon 1

7A: Antennas & Propagation 1

Chair: TBA

- 1 Measurement and Analysis of the Indoor UWB Channel**
Qiang Li, Wing Shing Wong, Chinese University of Hong Kong,
Hong Kong
- 2 UWB Channel Modeling and System Performance**
David R. McKinstry, R. Michael Buehrer, Virginia Tech, USA
- 3 Superresolution Measurement of Non-specular Wave Scattering from Building Surface Roughness**
Hary Budiarto, Kenshi Horihata, Katsuyuki Haneda, Jun-ichi
Takada, Tokyo Institute of Technology, Japan
- 4 Repeatability of Large-scale Signal Variations in Urban Environments**
W. Mark Smith, Donald C. Cox, Stanford University, USA
- 5 PDF of the Sum of Rician Signals and Gaussian Noise**
Zhan Yu, National University of Singapore, Singapore; Tjeng
Thiang Tjhung, Chin Choy Chai, Institute for Inforcomm
Research, Singapore
- 6 Distance Dependence of Path Loss for Millimeter Wave Inter-Vehicle Communications**
Satoshi Takahashi, Akihito Kato, Katsuyoshi Sato, Masayuki
Fujise, Communications Research Laboratory, Japan

- 7 Evaluation of Long Term Channel Prediction Methods Using Ray Tracing**
Charlie M. Stallard, Mark A. Wickert, University of Colorado at Colorado Springs, USA

Thursday, October 9, 8.30 – 10.00 Salon 1

8A: Antennas & Propagation 2

Chair: Sofiene Affes, University of Quebec, Canada

- 1 Design and Development of Multi-Band Antenna Arrays for Multi-Service Wireless Communication Networks**
Robert Isom, Magdy F. Iskander, Zhengqing Yun, Zhijun Zhang, University of Hawaii at Manoa, USA
- 2 Compact Antenna Structures for Mobile Handsets**
Juha Villanen, Jani Ollikainen, Outi Kivekas, Pertti Vainikainen, Helsinki University of Technology, Finland
- 3 Detection of the Number of Two-Dimensional Cisoids in White Gaussian Noise for Array Processing Algorithms**
Jari Salo, Hassan El-Sallabi, Pertti Vainikainen, Helsinki University of Technology, Finland
- 4 GPS Patch Antenna with Photovoltaic Solar Cells for Vehicular Applications**
Norbert Henze, Henning Fruchting, Andre Giere, University of Kassel, Germany
- 5 Robust Space-time Scatter Matrix Estimator for Broadband Antenna Arrays**
Esa Ollila, Luca Quattropani, Visa Koivunen, Helsinki University of Technology, Finland
- 6 Analysis of SINR for UMTS Rake Receiver-Smart Antenna Processing Using Two Different Modelling Approaches**
M. Jevrosimovic, M. H. A. J. Herben, G. Brussaard, Eindhoven University of Technology, Netherlands

Thursday, October 9, 10.30 – 12.15 Salon 1

9A: Antennas & Propagation 3

Chair: Yao Ma, Iowa State University, USA

- 1 Efficient Computation of Radio Coverage Zone Using a Spatial Partitionment Tool**
Lilian Aveneau, Pierre Combeau, Rodolphe Vauzelle, Michel Meriaux, University of Poitiers, France
- 2 Analysis of the SAGE DOA Parameter Extraction Sensitivity with 1.8 GHz Indoor Measurements**
Jo Verhaever, Emmanuel Van Lil, Katholieke Universiteit Leuven, Belgium; Sven Semmelrodt, Ralf Kattenbach, University of Kassel, Germany; Antoine Van de Capelle, Katholieke Universiteit Leuven, Belgium
- 3 A Near-ML Joint Doppler Frequency/TOA Search for Channel Characterization**
Timothy A. Thomas, Frederick W. Vook, Motorola Labs, USA
- 4 Blind Spatial Signature Estimation Using Time-Varying User Power Loading and Parallel Factor Analysis**
Yue Rong, Gerhard Mercator University, Germany; Sergiy A. Vorobyov, Alex B. Gershman, McMaster University, Canada; Nicholas D. Sidiropoulos, Technical University of Crete, Greece

- 5 Indoor MIMO Channel Measurements for Effectiveness of Array Antenna Configurations**
Tsutomu Mitsui, Masao Otani, Samsung Yokohama Research Institute, Japan; Chua Hai Yeow Eugene, Kei Sakaguchi, Kiyomichi Araki, Tokyo Institute of Technology, Japan

- 6 Complex-Wall Effect on Fading and MIMO Capacities for Wireless Communication Environments**
Zhengqing Yun, Magdy F. Iskander, Zhijun Zhang, University of Hawaii at Manoa, USA

- 7 Uplink Spatial Fading Correlation of MIMO Channel**
Umrani A. Waheed, Dubey Vimal K, Nanyang Technological University, Singapore

Thursday, October 9, 13.45 – 15.30 Salon 1

10A: Channel Modeling

Chair: TBA

- 1 Spatial Channel Models for Multiple Antenna Systems**
Roug Reed, Motorola, USA
- 2 Stochastic Model of Scattering Component Distribution in Outdoor Propagation Environment**
Tetsuro Imai, Tokio Taga, NTT DoCoMo Inc., Japan
- 3 Hybrid Ray Optical Models for the Penetration of Radio Waves into Enclosed Spaces**
P. Wertz, University of Stuttgart, Germany, G. Wolfle, AWE Communications GmbH, Germany, D. Zimmermann, F. M. Landstorfer, University of Stuttgart, Germany
- 4 Evaluation of the New Semi-Terrain Based Propagation Model Recommendation ITU-R P.1546**
Erik Ostlin, Hans-Jurgen Zepernick, Western Australian Telecommunications Research Institute, Australia; Hajime Suzuki, Commonwealth Scientific & Industrial Research Organisation, Australia
- 5 A Simple Directional Path Loss Model for a Terminal Inside a Car**
Fredrik Harrysson, Ericsson AB, Sweden

- 6 Characterization of 3D Spatial Wireless Channels**
Thushara D. Abhayapala, Tony S. Pollock, Rodney A. Kennedy, Australian National University, Australia

- 7 Conversion of reference tapped delay line channel models to discrete time channel models**
Joao Carlos Silva, Nuno Souto, Instituto Superior Tecnico, Portugal, Francisco Cercas, Americo Correia, ADETTI/IT, Portugal, A. Rodrigues, Instituto Superior Tecnico, Portugal

Thursday, October 9, 16.00 – 17.45 Salon 1

11A: Channel Simulation

Chair: TBA

- 1 Effective Modeling of Composite Walls in Hospitals for Ray-Optical Wave Propagation Simulations**
Thomas M. Schafer, Werner Wiesbeck, University of Karlsruhe, Germany
- 2 On a simulator of a buoyant antenna - satellite wireless channel**
Serguei Primak, Jeff Weaver, University of Western Ontario, Canada; Valeri Kontorovitch, CINVESTAV, Mexico
- 3 Computational Complexity of Narrow band and Wide band channel simulators**
R. Parra-Michel, Tecnológico de Monterrey Campus Guadalajara, Mexico; V. Y. Kontorovitch, A. G. Orozco-Lugo, M. Lara, CINVESTAV, Mexico

4 Investigation of Different Fading Forecast Schemes for Flat Fading Radio Channels

Sven Semmelrodt, Ralf Kattenbach, University of Kassel, Germany

5 Outdoor/Indoor Propagation Prediction for Complex Wall and Window Structures Using Ray-Tracing Models

Zhengqing Yun, Magdy F. Iskander, Zhijun Zhang, Rory K. Sorensen, University of Hawaii at Manoa, USA

6 Sum-of-sinusoids-based Simulator for Nakagami-m Fading Channels

Tasng-Ming Wu, Shiuian-Yuan Tzeng, Chung Yuan Christian University, Taiwan

7 Simulation of Rayleigh Faded Mobile-to-Mobile Communication Channels

Chirag S. Patel, Gordon L. Stuber, Thomas G. Pratt, Georgia Institute of Technology, USA

Tuesday, October 7, 15.35 - 17.05 Salon 2

3B: Link Level QoS

Chair: Nikos Passas, University of Athens, Greece

1 Queueing Behavior of Individual Mobiles in TDMA-based Cellular Systems

J. N. Daigle, G. Purushothaman, R. Wang, University of Mississippi, USA

2 Impact of Transmission Power Control on Appearance of Traffic Long-Range Dependence in DS-CDMA Cellular System

Junpei Taketsugu, Atsushi Nakata, Natsuko Yamada, Shinsuke Hara, Osaka University, Japan

3 Fully Distributed Power Control Algorithm with one Bit Signaling and Nonlinear Error Estimation

Mohammed Elmusrati, Matti Rintamaki, Iiro Hartimo, Heikki Koivo, Helsinki University of Technology, Finland

4 Game theoretic Analysis of Joint Link Adaptation and Distributed Power Control in GPRS

Samir Ginde, James Neel, R. Michael Buehrer, Virginia Tech, USA

5 Adaptive Incremental Redundancy

Jung-Fu Thomas Cheng, Yi-Pin Eric Wang, Ericsson Research, USA; Stefan Parvall, Ericsson Research, Sweden

Wednesday, October 8, 13.45 - 15.30 Salon 2

6B: Transceiver Techniques

Chair: Yoshihiko Akaiwa, Kyushu University, Japan

1 A Predistorter for a Power Amplifier affected by the Even-order Distortion

Naoki Hongo, Tetsuhiko Miyatani, Hitachi Kokusai Electric Inc., Japan; Yoshihiko Akaiwa, Kyushu University, Japan

2 Adaptive Compensation of Even-Order Distortion in Direct Conversion Receivers

Hsing-Hung Chen, Jiunn-Tsair Chen, National Tsing Hua University, Taiwan

3 ADC Residual Dynamic Range Constraints in Multistandard Mobile Terminals employing Wideband-IF Sampling

Holger Berndt, Hans-Joachim Jentschel, Dresden University of Technology, Germany

4 Baseband Compensation Techniques for Bandpass Nonlinearities

Ali Behravan, Thomas Eriksson, Chalmers University of Technology, Sweden

5 Investigation of the performance of a multimode, multiband receiver for OFDM and cellular systems

Milan Patel, Izzat Darwazeh, University College London, UK

6 All-Digital Receiver Structures for MC-UWB systems

Ebrahim Saberinia, Ahmed H. Tewfik, University of Minnesota, USA

Tuesday, October 7, 10.15 - 12.00 Salon 3

1C: Channel Coding 1

Chair: TBA

1 A Novel Coding Strategy to Improve the Error Probability of Non-linearly Distorted OFDM Signals

M. R. D. Rodrigues, I. J. Wassell, University of Cambridge, UK

2 Performance and Design of a Reduced Complexity Iterative Equalizer for Precoded ISI Channels

Andrew G. Lillie, Andrew R. Nix, Joe P. McGeehan, University of Bristol, UK

3 New Results on the Search for Convolutional Self-Doubly Orthogonal Codes Suitable for Iterative Threshold Decoding

David Haccoun, Christian Cardinal, Ecole Polytechnique de Montreal, Canada; Francois Gagnon, Ecole de Technologie Superieure, Canada

4 Serial JEVA for Robust Decoding in Impulsive Noise Channels

Tao Li, Wai Ho Mow, Man Hung Siu, Hong Kong University of Science & Technology, Hong Kong

5 Low-Density Parity-Check Codes with Power Reallocation

Woohyuk Chang, Sang Wu Kim, Korea Advanced Institute of Science and Technology, Korea

6 Performance of Spread OFDM with LDPC Coding in Outdoor Environments

Ali Serener, Balasubramaniam Natarajan, Don M. Gruenbacher, Kansas State University, USA

Tuesday, October 8, 13.30 - 15.15 Salon 3

2C: Channel Coding 2

Chair: Tiffany Jing Li, Lehigh University, USA

1 Distributed Turbo Codes: Towards the Capacity of the Relay Channel

Matthew C. Valenti, Bin Zhao, West Virginia University, USA

2 Improved Interleaver Design for Turbo-Coded Intersymbol Interference Channels

Ali Ghrayeb, Neda Ehtiati, M. Reza Soleymani, Concordia University, Canada

3 A Turbo Decoder for High Speed Downlink Packet Access

Tusguo Maru, NEC Networks, Japan

4 An Efficient Architecture for High Speed Turbo Decoders

Aliazam Abbasfar, Kung Yao, University of California Los Angeles, USA

5 Low-Density Parity-Check (LDPC) Coded MIMO Systems with Iterative Turbo Decoding
Hisashi Futaki, NEC, Japan; Tomoaki Ohtsuki, Tokyo University of Science, Japan

6 An Integrated Joint Source-Channel Decoder for MPEG-4 Coded Video
Quingyu Chen, K. P. Subbalakshmi, Stevens Institute of Technology, USA

Tuesday, October 7, 15.35 - 17.05 Salon 3

3C: MIMO 1

Chair: Andreas Molisch, Mitsubishi Electric Research Laboratory, USA

1 Study of different mechanisms providing gain in MIMO systems

Kati Sulonen, Pasi Suvikunnas, Jarmo Kivinen, Pertti Vainikainen, Helsinki University of Technology, Finland

2 Distributed source model for short-range MIMO
Jeng-Shiann Jiang, Mary Ann Ingram, Georgia Institute of Technology, USA

3 Power and Complex Envelope Correlation for Modeling Measured Indoor MIMO Channels: A Beamforming Evaluation

Jon Wallace, Brigham Young University, USA; Huseyin Ozcelik, Markus Herdin, Ernst Bonek, Vienna University of Technology, Austria; Michael Jensen, Brigham Young University, USA

4 Increasing System Throughput by Random Beamforming in Multiuser Systems with Slowly Varying Fading Channels

Peter Schulz-Rittich, Andreas Senst, Ulrich Krause, Heinrich Meyr, Aachen University, Germany

5 Effective use of Long-term Transmit Channel State Information in Multi-user MIMO Communication Systems

Michel T. Ivrlac, Munich University of Technology, Germany; Ruly Lai-U Choi, Ross D. Murch, Hong Kong University of Science & Technology, Hong Kong; Josef A. Nossek, Munich University of Technology, Germany

6 Dual-Polarized MIMO Macrocellular Wireless Transmissions: Modeling, Validation and Analysis

Claude Oestges, Universite Catholique de Louvain, Belgium; Vinko Erceg, Zyray Wireless, USA; Arogyaswami J. Paulraj, Stanford University, USA

Wednesday, October 8, 8.30 - 10.00 Salon 3

4C: MIMO 2

Chair: Behrouz Farhang-Boroujeny, University of Utah, USA

1 Performance Analysis of MIMO Wireless Systems with Spatially Correlated Fading Channels

Chao-Kai Wen, Jiunn-Tsair Chen, National Tsing Hua University, Taiwan

2 Measured capacities at 5.8 GHz of indoor MIMO systems with MIMO interference

Jeng-Shiann Jiang, M. Fatih Demirkol, Mary Ann Ingram, Georgia Institute of Technology, USA

3 Impact of "Diagonal" Correlations on MIMO Capacity: Application to Geometrical Scattering Models

Claude Oestges, Bruno Clerckx, Danielle Vanhoenacker-Janvier, Universite Catholique de Louvain, Belgium; Arogyaswami J. Paulraj, Stanford University, USA

4 Multiple Antenna Transmitter Optimization Schemes for Multiuser Systems

Dragan Samaradzija, Bell Labs, Lucent Technologies, USA; Narayan Mandayam, Rutgers University, USA

5 Space-Time Processing for Cooperative Relay Networks

Ingmar Hammerstroem, Marc Kuhn, Boris Rankov, Armin Wittneben, Swiss Federal Institute of Technology, Switzerland

6 Joint Transmit and Receive Multi-user MIMO Decomposition Approach for the Downlink of Multi-user MIMO Systems

Ruly Lai-U Choi, Hong Kong University of Science & Technology, Hong Kong; Michel T. Ivrlac, Munich University of Technology, Germany; Ross D. Murch, Hong Kong University of Science & Technology, Hong Kong; Josef A. Nossek, Munich University of Technology, Germany

Wednesday, October 8, 10.30 - 12.15 Salon 3

5C: MIMO 3

Chair: TBA

1 High-Performance MIMO Receivers based on Multi-Stage Partial Parallel Interference Cancellation

Holger Claussen, University of Edinburgh, UK; Hamid Reza Karimi, Lucent Technologies, UK; Bernard Mulgrew, University of Edinburgh, UK

2 A Simplified Maximum Likelihood Detection Scheme for MIMO Systems

Hozun Sung, Jee Woong Kang, Kwang Bok (Ed) Lee, Seoul National University, Korea

3 Generalized RAKE Receivers for MIMO Systems

Stephen J. Grant, Karl J. Molnar, Gregory E. Bottomley, Ericsson Inc., USA

4 A New Low Complexity Optimal Decoding Method for MIMO systems

Mohammad A. Maddah-Ali, Amir K. Khandani, University of Waterloo, Canada; Wen Tong, Nortel Networks, Canada

5 LDC Construction with a Defined Structure

A. Agustin, A. Pagez-Zamora, J. Vidal, Universitat Politecnica de Catalunya, Spain

6 Correlation-Based Frequency Offset Estimation in MIMO System

Yao Yao, Tung-Sang Ng, University of Hong Kong, Hong Kong

7 Frequency Domain Adaptive Equalization for MIMO Systems

Hai Huyen Dam, Sven Nordholm, Hans-Jurgen Zepernick, Western Australian Telecommunications Research Institute, Australia

Wednesday, October 8, 13.45 - 15.30 Salon 3

6C: MIMO 4

Chair: Noriyoshi Kuroyanagi, NKT-Lab, Japan

1 Adaptive Space Division Multiplexing and Bit-and-Power Allocation in Single-Carrier Multi-User MIMO Flat Fading Channels

Kai-Kit Wong, University of Hong Kong, Hong Kong

2 Comparison of Space Division Multiplexing Schemes Employing Multiple Antennas

Junichiro Kawamoto, Takahiro Asai, Kenichi Higuchi, Mamoru Sawahashi, NTT DoCoMo Inc., Japan

3 Blind Channel Estimator for V-BLAST coded DS-CDMA System in Frequency-selective Fading Environment

Ke Deng, Quinye Yin, Le Ding, Zheng Zhao, Xi'an Jiaotong University, China

4 Capacity Optimized Space-Time Processing for CDMA MIMO Antenna Systems

Cheol Mun, Chungju National University, Korea

5 Low Complexity Frequency Domain Equalization of MIMO Channels with Applications to MIMO-CDMA Systems

A. Burg, ETH Zurich, Switzerland; M. Rupp, Vienna University of Technology, Austria; D. Perels, S. Haene, N. Felber, W. Fichtner, ETH Zurich, Switzerland

6 Performance of MIMO-extended UMTS-FDD Downlink comparing Space-Time Rake and Linear Equalizer

A. Burg, ETH Zurich, Switzerland; M. Rupp, Vienna University of Technology, Austria; D. Perels, S. Haene, N. Felber, W. Fichtner, ETH Zurich, Switzerland

7 MIMO Downlink Spatial Multiplexing Algorithms Applied to Channel Measurements

Quentin Spencer, Thomas Svantesson, Brigham Young University, USA

Wednesday, October 8, 16.00 – 17.45 Salon 3

7C: MIMO 5

Chair: Yang-Seok Choi, Vivato, Inc, USA

1 Bit-Allocation Strategies for Closed-Loop MIMO-OFDM

Joon Hyun Sung, John R. Barry, Georgia Institute of Technology, USA

2 Performance Comparison of MF and MMSE Combined Iterative Soft Interference Canceller and V-BLAST Technique in MIMO/OFDM Systems

Takumi Ito, NEC, Japan; Xiaodong Wang, NEC, USA; Yoshikazu Kakura, NEC, Japan; Mohammad Madihian, NEC, USA; Akihisa Ushirokawa, NEC, Japan

3 A MIMO-OFDM System for High-Speed Transmission

Yatsutaka Ogawa, Keisuke Nishio, Toshihiko Nishimura, Takeo Ohgane, Hokkaido University, Japan

4 On Spreading Codes for the Downlink in a Multiuser MIMO/OFDM System

Roya Doostnejad, Teng Joon Lim, Elvino S. Sousa, University of Toronto, Canada

5 Iterative Trellis Search Detection for Asynchronous MIMO Systems

Yvo L. C. de Jong, Tricia J. Willink, Communications Research Centre, Canada

6 MMSE Extension of V-BLAST based on Sorted QR Decomposition

Dirk Wübben, Ronald Böhnke, Volker Kühn, Karl-Dirk Kammeyer, University of Bremen, Germany

Thursday, October 9, 8.30 – 10.00 Salon 3

8C: Space Time Coding

Chair: TBA

1 Space-Time Block Coding for Four Transmit Antennas over Time-Selective Fading Channels: Orthogonal or Non-orthogonal Design?

F. C. Zheng, A. G. Burr, University of York, UK

2 Low-Complexity Channel-Adapted Space-Time Coding Schemes for Frequency-Selective Wireless MIMO Channels

Ching-Shyang Maa, Yeong-Cheng Wang, Jiunn-Tsair Chen, National Tsing Hua University, Taiwan

3 Iterative Detection of Coded Space-Time Block Coding Scheme with no Channel Estimation

Xun Shao, Jinhong Yuan, University of New South Wales, Australia

4 Multi-user Detection for Mutually Orthogonal Sequences with Space-Time Coding

Soner Ozgur, Douglas B. Williams, Georgia Institute of Technology, USA

5 Space-Time MIMO Receiver with Constrained Optimization

Jianzhong Zhang, Nokia Research Center, USA; Akbar Sayeed, Barry Van Veen, University of Wisconsin at Madison, USA

6 Spatial T-H Precoding for Packet Data Systems with Scheduling

Jing Jiang, Michael Buehrer, William H. Tranter, Virginia Polytechnic Institute and State University, USA

Tuesday, October 7, 15.35 – 17.05 Salon 6

3D: Location and Location Management

Chair: Madjid F. Nakhjiri, Motorola, USA

1 Maximum Likelihood Location Estimation Using Signal Strength and the Mobile Station Velocity in Cellular Systems

Masato Aso, Takahiko Saikawa, Takeshi Hattori, Sophia University, Japan

2 A novel estimator and theoretical limits for in-car radio-location

Andreu Urruela, Jaume Riba, Universitat Politecnica de Catalunya, Spain

3 Improved Handset Tracking using Kalman Filter Algorithms Aided by Angle Spread Information from a Smart Antenna Array

R. F. Ormondroyd, I. Jami, Cranfield University, UK; E. Artarit, Ecole Central de Lille, France

4 An Improved Movement-based Location Management Scheme for PCS Networks

Lei Li, Yi Pan, Georgia State University

5 Caching Scheme on Dynamic Location Management for PCS Networks

Chang Woo Pyo, Jie Li, Hisao Kameda, University of Tsukuba, Japan

6 A New Fast Code/Frequency Acquisition Algorithm for GPS C/A Signals

Fernando D. Nunes, Jose M. N. Leitao, Instituto Superior Tecnico, Portugal

Wednesday, October 8, 10.30 – 12.15 Salon 6

5D: WLAN

Chair: TBA

- 1 Markov Modeling of 802.11 channels**
Julio Arauz, Prashant Krishnamurthy, University of Pittsburgh, USA
- 2 MAC-PHY Enhancement for 802.11b WLAN Systems via Cross-layering**
Luis Alonso, Ramon Ferrus, Ramon Agusti, Polytechnic University of Catalonia, Spain
- 3 Frequency Synchronization for MIMO OFDM Wireless LAN Systems**
T. C. W. Schenk, A. van Zelst, Eindhoven University of Technology, Netherlands
- 4 Effect of Bluetooth Interference on OFDM-based WLAN**
Jeongho Park, Changeon Kang, Daesik Hong, University of Yonsei, Korea
- 5 An Evaluation Scheme of Cell Throughput for Multi-rate Wireless LAN Systems with CSMA/CA**
Takafumi Fujita, Takeshi Onizawa, Satoru Hori, Atsushi Ohta, Satoru Aikawa, NTT Corporation, Japan
- 6 Adaptive Multi-user Detection for Mobile-centric Fast Handoffs in Pseudocellular Wireless Networks**
Kristoffer Bruvold, Upamanyu Madhow, University of California at Santa Barbara, USA
- 7 Decentralized Control Mechanism Suppressing Delay Fluctuation in Wireless LANs**
Hiroyuki Yamada, Hiroyuki Morikawa, Tomonori Aoyama, University of Tokyo, Japan

Thursday, October 9, 8.30 – 10.00 Salon 6

8D: WCDMA

Chair: TBA

- 1 A Complete Mathematical Programming Model for W-CDMA Radio Planning with Uplink and Downlink Constraints**
Edoardo Amaldi, Antonio Capone, Federico Malucelli, Francesco Signori, Politecnico di Milano, Italy
- 2 Optimising Statistical Uplink Admission Control for W-CDMA**
O. Sallent, J. Perez-Romero, R. Agusti, Universitat Politècnica de Catalunya, Spain
- 3 Load Sharing Methods in a WCDMA Macro Multi-Carrier Scenario**
Andrea Fiorini, Riccardo De Bernardi, Ericsson, Italy
- 4 Influence of Bandwidth on Rake Receiver Captured Power for Enhanced IMT2000**
Hassan M. El-Sallabi, Helsinki University of Technology, Finland
- 5 Coverage and Capacity of WCDMA Systems with Beam Steering Antennas**
Vicente A. de Sousa Jr., Carlos H. M. de Lima, Emanuel B. Rodrigues, Francisco R. P. Cavalcanti, Andre R. Braga, Federal University of Ceara, Brazil
- 6 SIR Estimation and Closed-Loop Power Control for 3G**
Louay M. A. Jalloul, Michael Kohlmann, Joel Medlock, Morphics Technology Inc., USA

Thursday, October 9, 10.30 – 12.15 Salon 6

9D: cdma2000 & MC-CDMA

Chair: TBA

- 1 Performance of Fixed Wireless Access with cdma2000 1xEV-DO**
Eduardo Esteves, Mehmet I. Gurelli, Mingxi Fan, Qualcomm Inc, USA
- 2 The Impact of Adaptive Antenna Array Receiver on the Reverse Link Capacity of CDMA2000 1xEV High Rate Packet Data Systems**
Mingxi Fan, Eduardo Esteves, Qualcomm Inc, USA
- 3 Quasi Field Test Results of Adaptive Array Processing Suitable For CDMA2000 1xEV-DO Terminal**
Song Shi, Tadayuki Fukuhara, Tohru Sunaga, Hao Yuan, Fangwei Tong, Masanori Kato, Kyocera Corporation, Japan
- 4 Transmit Space-Frequency Prefiltering Technique for Downlink TDD MC-CDMA Systems**
Adão Silva, Atilio Gameiro, Instituto de Telecomunicações, Portugal
- 5 On the Performance of Different Channel Pre-compensation Techniques for Uplink Time Division Duplex MC-CDMA**
Ivan Cosovic, Michael Schnell, German Aerospace Center, Germany, Andreas Springer, Institute for Communications and Information, Austria
- 6 Rotated Spreading Sequences for Broadband Multicarrier-CDMA**
Ronald Raulefs, Armin Dammann, Stefan Kaiser, German Aerospace Center, Germany, Gunther Auer, DoCoMo Euro labs, Germany
- 7 V-BLAST Receivers for Downlink MC-CDMA Systems**
Zhongding Lei, Xiaoming Peng, Francois P. S. Chin, Institute for Communications Research, Singapore

Thursday, October 9, 13.45 – 15.30 Salon 6

10D: CDMA

Chair: TBA

- 1 Interference Analysis of CDMA Network Using Existing Integrated Wireless distribution Systems in Subways**
Honglan Yang, Shanghai Post & Telecommunication Design Institute, China; Fuyun Ling, Qualcomm Inc. USA
- 2 Adaptive Transmission Timing Control Using Reservation Packet in Reverse Link for Broadband DS-SS-CDMA Wireless Access**
Teruo Kawamura, Hiroyuki Atarashi, Mamoru Sawahashi, NTT DoCoMo, Inc., Japan
- 3 Downlink Performance of a CDMA System with Distributed Base Station**
Ryo Hasegawa, Masashige Shirakabe, Riaz Esmailzadeh, Masao Nakagawa, Keio University, Japan
- 4 Frequency and Time Synchronization for the CDMA Array-Receiver STAR with Interference Subspace Rejection**
Besma Smida, Sofiene Affes, Paul Mermelstein, University of Quebec, Canada

- 5 Maximum-Likelihood Delay Estimation for DS-CDMA Communication Systems**
H. S. Oh, Y. S. Lim, K. H. Paik, Y. S. Moon, G. K. Choi,
Samsung Electronics Co. Ltd, Korea
- 6 Synchronous CDMA Systems with Group-Orthogonal Signature Waveforms**
Ha H. Nguyen, University of Saskatchewan, Canada
- 7 Matched Filter Bounds for Low Spreading Factor DS-CDMA with Random Spreading Sequences**
Tracy L. Fulghum, Gregory E. Bottomley, Ericsson Research,
USA

Wednesday, October 9, 16.00 – 17.45 Salon 6

11D: OFDM

Chair: TBA

- 1 Joint Layer Design for an Adaptive OFDM Transmission System**
Rainer Grunheid, Bing Chen, Hermann Rohling, Technical
University Hamburg-Harburg, Germany
- 2 Impact of Multiuser Diversity and Channel Variability on Adaptive OFDM**
Wei Wang, Tony Ottosson, Chalmers University of Technology,
Sweden; Mikael Sternad, Anders Ahlen, Uppsala University,
Sweden; Arne Svensson, Chalmers University of Technology,
Sweden
- 3 An Iterative Technique for CEPB-OFDM Transmission with Low Out-of-Band Radiation**
Rui Dinis, Antonio Gusmao, Instituto Superior Tecnico, Portugal
- 4 High-Performance 64-QAM OFDM via Carrier Interferometry Spreading Codes**
Zhiqiang Wu, West Virginia University Institute of Technology,
USA; Zhijin Wu, Johns Hopkins University, USA; David A.
Wiegandt, Carl R. Nassar, Colorado State University, USA
- 5 A peak power reduction scheme with phase-control of clustered parity-carriers for a systematic block-coded OFDM signal**
Osamu Muta, Yoshihiko Akaiwa, Kyushu University, Japan
- 6 MMSE Turbo Receiver for Space-Frequency Bit-Interleaved Coded OFDM**
D. Zuyderhoff, Xavier Wautelet, Antoine Dejonghe, Luc
Vandendorpe, Universite Catholique de Louvain, Belgium
- 7 Effects of Bit-punctured Channel Coding in Space-Frequency Diversity Performance of Bit-interleaved Coded OFDM**
Kee-Bong Song, Stanford University, USA; Syed Aon Mujtaba,
Agere Systems, USA

Thursday, October 9, 10.30 – 12.15 Salon 7

9E: Network Performance

Chair: Hoang M. Nguyen, Insitute for Infocomm Research, Singapore

- 1 Spectral Efficiency of Time Division Duplex Fixed Wireless Cellular System for Dynamic Traffic**
Wuncheol Jeong, Oklahoma State University, USA; Mohsen
Kavehrad, Pennsylvania State University, USA
- 2 GPRS / EDGE Performance on Reserved and Shared Packet Data Channels**
K. Ivanov, C. F. Ball, F. Treml, Siemens AG, Germany

3 Efficient Broadcast Frequency Utilization – A Key to High Capacity Cellular Networks

Stephen Craig, Christian Jansson, Ylva Timmer, Tobias
Tynderfeldt, Ericsson AB, Sweden

4 Data Throughput in a Single-Macrocell/Single-Microcell CDMA System with Application to Data Access Points

Shalinee Kishore, Lehigh University, USA; Stuart C. Schwartz,
Princeton University, USA; Larry J. Greenstein, Rutgers
University, USA; H. Vincent Poor, Princeton University, USA

5 Tradeoff between Coverage and Capacity in Dynamic Optimization of 3G Cellular Networks

G. Hampel, K. L. Clarkson, J. D. Hobby, P. A. Polakos, Lucent
Technologies, USA

6 Call Admission on the Downlink of a CDMA System Based on Total Transmitted Power

Sonia Aissa, Joy Kuri, Paul Mermelstein, University of Quebec,
Canada

7 Stability Analysis of an Access Scheme for Mixed Traffics in LEO and MEO systems

Giovanni Giambene, Enrico Zoli, University of Siena, Italy

Wednesday, October 9, 16.00 – 17.45 Salon 8

11F: UWB & Bluetooth

Chair: TBA

- 1 Collision Analysis for a Multi-Bluetooth Picocells Environment**
Ting-Yu Lin, Yu-Chee Tseng, National Chiao-Tung University,
Taiwan
- 2 Packet Interference in a Heterogeneous Cluster of Bluetooth Piconets**
Kshirasagar Naik, University of Waterloo, Canada; David S. L.
Wei, Fordham University, USA; Yu T. Su, National Chiao-Tung
University, Taiwan
- 3 Interference due to Link Management Signalling in Co-ordinated Co-located Bluetooth networks**
Nathan Amanquah, John Dunlop, University of Strathclyde, UK
- 4 Energy Efficient Bridge Management Policies for Inter-Piconet Communication in Bluetooth Scatternets**
Ranganath Duggirala, Roy L. Ashok, Dharma P. Agrawal,
University of Cincinnati, USA
- 5 Improving the Range of Ultrawideband Transmission using Rake Receivers**
S. Gaur, A. Annamalai, Virginia Tech, USA
- 6 Performance of an Optimally Spaced PPM Ultrawideband System with Direct Sequence Spreading for Multiple Access**
Vinod Venkatesan, Huaping Liu, Oregon State University, USA;
Curt Nilsen, Ron Kyker, Sandia National Labs, USA; Mario. E.
Magana, Oregon State University, USA
- 7 Ultra-Wideband Impulse Radio Systems with Temporal and Spatial Diversities**
Sheu-sheu Tan, National University of Singapore, Singapore; B.
Kannan, Institute for Infocomm Research, Singapore; A.
Nallanathan, University of Singapore, Singapore

Tuesday, October 7, 10.15 – 12.00 Salon 4 & 5

1P: Antennas & Propagation Posters 1

1 Outdoor Optical Wireless Communication Systems: A Model and Two Measurements

Tiffany Jing Li, Lehigh University, USA

- 2 Modeling of Wireless Channel Behavior for Fast Simulations: A Soft-Bit Level Perspective**
Eugenio Costamagna, Lorenzo Favalli, Pietro Savazzi, Francesco Tarantola, University of Pavia, Italy
- 3 Maximizing Throughput with Ultra-Compact Diversity Antennas**
David Auckland, W. Klimczak, Gregory Durgin, Etenna Corporation, USA
- 4 Real-time Simulation of Measured Radio Channels**
Janne Kolu, Elektrobit Ltd., Finland, Andreas Stucki, Elektrobit AG, Switzerland, Ari Hulkkonen, Tommi Jämsä, Elektrobit Ltd., Finland
- 5 Directional Indoor Ultra Wideband Propagation Mechanisms**
Harold Hoff, CELAR, France, Patrick Eggers, Istvan Kovacs, Aalborg University, Denmark
- 6 An Optimum Combiner for a Smart Antenna in an Indoor Infrastructure WLAN**
Karim Nasr, Fumie Costen, Stephen Barton, University of Manchester, United Kingdom
- 7 The Effect of Various Channel Conditions on the Performance of Different Antenna Array Architectures**
Su Khiong Yong, John S. Thompson, University of Edinburgh, UK

Tuesday, October 7, 10.15 – 12.00 Salon 4 & 5

1Q: CDMA Posters

- 1 MUI-Suppression with Lattice Structures for UTRA FDD Downlink**
Klaus Knoche, University of Bremen, Germany; Wen Xu, Siemens AG, Germany; Jürgen Rinas, Karl-Dirk Kammeyer, University of Bremen, Germany
- 2 Fast Joint Detector and Comparison with Single User Detection**
Parthapratim De, Indian Institute of Technology, India
- 3 Analytical Performance of Quantized Closed Loop Power Control under Fast Fading for CDMA Techniques**
Sam Nourizadeh, Tony Jeans, Rahim Tafazolli, University of Surrey, UK
- 4 Performance of Polyphase Spreading Sequences with Optimized Cross-Correlation Properties**
Hans-Juergen Zepernick, Hai Huyen Dam, University of Western Australia, Australia; Virat Deepak, Ohio University, USA
- 5 Adaptive CDMA Cell Sectorization with Linear Multiuser Detection**
Changyoon Oh, Aylin Yener, Pennsylvania State University, USA
- 6 The Influence of Multiple Outdoor Interferers on In-Building DS-CDMA Wireless System Performance**
Adrian V. Pais, Kevin W. Sowerby and Michael J. Neve, The University of Auckland, New Zealand
- 7 An Improved Design of Chip Waveforms for Band-limited DS-CDMA Systems**
Ha Nguyen, University of Saskatchewan, Canada
- 8 A MUSIC-based algorithm for Blind Spreading Sequence Discovery and User Identification in Multiuser DS-CDMA**
Afshin Haghighat, M. Reza Soleymani, Concordia University, Canada
- 9 A technique to realize base stations On-Air Frame Synchronization in TD-SCDMA Radio System**
Massimo Capaccioli, Domenico Rispo, Siemens Mobile Communications S.p.A, Italy
- 10 Low Complexity CDMA Downlink Receiver Based on Frequency Domain Equalization**
Ihan Martoyo, Timo Weiss, Fatih Capar, Friedrich Jondral, University of Karlsruhe, Germany
- 11 Interference Analysis for Dedicated Indoor WCDMA Systems**
Ralf Schuh, Robert Andersson, Andre Stranne, Magnus Sommer, Peter Karlsson, TeliaSonera Sweden AB, Sweden
- 12 Performance of the HSDPA Concept in a Beamforming Environment Under Code Constraints**
Klaus Pedersen, Preben Mogensen, Nokia Networks, Denmark

Tuesday, October 8, 13.30 – 15.15 Salon 4 & 5

2Pa: Antennas & Propagation Posters 2

- 1 Performance Enhancement of CDMA Cellular Systems with a New Adaptive Algorithm for Base-Station Antenna Arrays**
Khalida Ghanem, Tayeb A. Denidni, Sonia Aissa, University of Quebec, Canada
- 2 A Low-complexity Beamforming Algorithm for 3G Macro-cellular System to Reduce Interference from High Data Rate Users**
Takaaki Kishigami, Yasuaki Yuda, Takashi Fukagawa, Matsushita Electrical Industrial Co., Ltd., Japan, Masayuki Hoshino, Panasonic Mobile Communications Co., Ltd., Japan
- 3 Design of Fast DOA Estimator using Unitary MUSIC Algorithm based on FPGA**
Minseok Kim, Koichi Ichige, Hiroyuki Arai, Yokohama National University, Japan
- 4 A Downlink Beam Selection Scheme with Feedback in CDMA/FDD Systems**
Kazunari Kihira, Yoshitaka Hara, Takashi Sekiguchi, Mitsubishi Electric Corporation, Japan
- 5 Field Experiments on Optimum Number of Antennas for Adaptive Antenna Array-Beam Forming Transmitter in W-CDMA Forward Link**
Hidekazu Taoka, Takashi Kataoka, Kenichi Higuchi, Takahiro Asai, Mamoru Sawahashi, NTT DoCoMo, Inc., Japan
- 6 An Evaluation of Adaptive Antennas for UMTS FDD by System Simulations**
Magne Pettersen, Lars Erling Bråten, Anders G. Spilling, Telenor R&D, Norway
- 7 A Reverselink Beamforming based on Simplex Downhill Algorithm for Time-Varying Channel Environments**
Joonsung Lee, University of Yonsei, Korea, Changheon Oh, Korea University of Technology and Education, Korea, Chungyong Lee, University of Yonsei, Korea

Tuesday, October 8, 13.30 – 15.15 Salon 4 & 5

2Pb: Location Posters

1 A Proactive Approach for Mobile GIS
Wenzhong Shi, Kawai Kwan, Jiannong Cao, Geoffrey Shea,
Hong Kong Polytechnic University, Hong Kong

2 A Study on the Measurement Method of the Mobile Station Location in wide-band Mobile Communications
Hideki Omote, Teruya Fujii, Japan Telecom, Japan

3 An Alternative Approach to Positioning a Wireless Terminal Using a Single Array Antenna in Multipath Environments
Shohei Kikuchi, Keio University, Japan, Hiroyuki Tsuji, Ryu Miura, Independent Administrative Institution, Japan, Akira Sano, Keio University, Japan

Tuesday, October 8, 13.30 – 15.15 Salon 4 & 5

2Q: MIMO Posters

1 Joint Maximum Likelihood Detection and Interference Cancellation for MIMO/OFDM Systems
Khaled Letaief, Hong Kong University of Science and Technology, Hong Kong; Eunyoung Choi, Jae-Young Ahn, ETRI, Korea; Raymond Chen, Hong Kong University of Science and Technology, Hong Kong

2 Iterative MIMO ML detection with on-line initialization selection for unknown channels and unstructured asynchronous interference
Alex Kuzminskiy, Lucent Technologies, UK

3 An Experimental Evaluation of the Subscriber Antenna Pattern Effect in a MIMO-OFDM System
Tom Krauss, Igor Lisica, Xiangyang Zhuang, Motorola Labs, USA

4 Space-time coded decorrelating RAKE receiver for fast fading CDMA channels
Chun Yu Fung, Shing-Chow Chan, University of Hong Kong, Hong Kong

5 A Turbo Equalizer with Simplified MMSE Filtering for MIMO Channel Signal Transmission
Hiromasa Fujii, Shigeru Tomisato, Hirohito Suda, NTT DoCoMo, Inc., Japan

6 Constellation Space Invariance of Space-Time Block Codes with Application to Optimal ML Decoding
Mohammad Gharavi-Alkhansari, University of Duisburg-Essen, Germany; Alex Gershman, McMaster University, Canada

7 Improved Packet Data Performance for WCDMA using Multi-Antenna Techniques
Karl Molnar, Stephen Grant, Leonid Krasny, Ericsson Inc, USA; Eva Englund, Ericsson Radio Systems AB, Sweden

8 Channel Estimation Error Effects on the Performance of STB Codes in Flat Frequency Rayleigh Channels
Dimas Mavares Terán, Rafael Torres, Universidad de Cantabria, Spain

9 Efficient Simulation of Space-Time Correlated MIMO Mobile Fading Channels
Kodzovi Acolatse, Ali Abdi, New Jersey Institute of Technology, USA

10 Performance of a UMTS Uplink MIMO Scheme
Esa Tirola, Juha Ylitalo, Nokia Networks, Finland

11 A Decision Directed Receiver For Alamouti Coded OFDM Systems
Jaekwon Kim, Byungchul Jang, Robert W. Heath Jr., Edward J. Powers, The University of Texas at Austin, USA

Wednesday, October 9, 16.00 – 17.45 Salon 4 & 5

11P: Modulation & Coding Posters

1 A Novel Hybrid Coding Scheme
Yiqun Zhu, Mohammed Benaissa, Wei Ming Lim, University of Sheffield, UK

2 Design of VLSI Implementation-Oriented LDPC Codes
Hao Zhong, Tong Zhang, Rensselaer Polytechnic Institute, USA

3 Adaptive Reliability Calculation for Block Turbo Codes
Ashraf Mahran, Mohammed Benaissa, University of Sheffield, UK

4 Complexity Reduced Turbo Decoding with Concatenated Detection Codes
Lei Cao, John Daigle, University of Mississippi, USA; Chang Wen Chen, University of Missouri-Columbia, USA; Mustafa Matalgah, University of Mississippi, USA

5 Code Concatenations for Blind Space Time Coded Systems
Stylianios Manioudakis, Wai Lok Woo, Bayan Sharif, University of Newcastle Upon Tyne, UK

6 Baseband Predistortion Techniques for M-QAM Transmission Using Non-Linear Power Amplifiers
Thai Hoa Vo, Tho Le-Ngoc, McGill University, Canada

7 Continuous Phase Modulation of Spectrally Efficient FQPSK-B Signals
Hyung Chul Park, Kwyro Lee, Korea Advanced Institute of Science and Technology, Korea; Kamilo Feher, University of California, USA

8 Empirical Model for Spectrally Efficient Continuous Phase Modulation
Tommy Svensson, Arne Svensson, Chalmers University of Technology, Sweden

9 BER Performance of A Novel Pulse Shape in Cochannel Interference
Julian Cheng, Norman C Beaulieu, University of Alberta, Canada

10 Peak-to-Average Ratio (PAR) Reduction by Pulse Shaping using a New Family of Generalized Raised Cosine Filters
Peter Rha, Sage Hsu, University of Miami, USA

11 High-Performance Wideband Wireless TDMA via Carrier Interferometry Pulse Shaping
Zhiqiang Wu, West Virginia University Institute of Technology, USA; David Wiegandt, Carl Nassar, Colorado State University, USA

Interference Cancellation for Wireless Mobile Radio Systems

Chair: Huseyin Arslan, University of South Florida

Tuesday, October 7, 10.15 – 12.00 Salon 1

1A: Interference Cancellation for Wireless Mobile Radio Systems 1

Chair: Huseyin Arslan, University of South Florida

- 1 Chip-Level MMSE Equalization for The Forward Link of UMTS-FDD: a Low Complexity Approach**
Belkacem Mouhouche, Karim Abed-Meraim, Telecom Paris, France; Nicolas Ibrahim, Wavecom, France; Philippe Loubaton, Université de Marne La Vallée, France
- 2 Asymptotic Performance of Hierarchical Fuzzy Interference Cancellers for CDMA**
Joan Bas, Ana I. Pérez-Neira, Polytechnic University of Catalonia, Spain
- 3 Interference Cancellation for EDGE Systems via Multi-user Demodulation**
Abdulrauf Hafeez, Dennis Hui, Ericsson, USA; Huseyin Arslan, University of South Florida, USA
- 4 Interference Cancelling Receiver for Range Extended Reception in TDMA Cellular Systems**
Gordon Stuber, Kihong Kim, Georgia Institute of Technology, USA
- 5 On the Effect of Cancellation Order in Successive Interference Cancellation for CDMA systems**
Kiran Puttegowda, Gautam Verma, Soshant Bali, Michael Buehrer, Virginia Tech, USA
- 6 Multi-Stage Multi-User Detection Assisted Asynchronous Fast-FH/MFSK**
Kiyoshi Hamaguchi, Communications Research Laboratory, Japan; Lie-Liang Yang, Lajos Hanzo, University of Southampton, UK
- 7 Parallel and Successive Interference Cancellation for MC-CDMA and their Near-Far Resistance**
Nevio Benvenuto, Paola Bisaglia, University of Padova, Italy

Tuesday, October 7, 13.30 – 15.15 Salon 1

2A: Interference Cancellation for Wireless Mobile Radio Systems 2

Chair: Dennis Hui, Ericsson Research, USA

- 1 An Improved BER Calculation for Nonlinear Successive Interference Cancellation**
Kai Yen, Institute for Infocomm Research, Singapore; Douglas Ho, National University of Singapore, Singapore
- 2 An Adaptive PIC Receiver with Diversity Combining for MC-DS-CDMA System**
Huahui Wang, National University of Singapore, Singapore; Kay Wee Ang, Institute for Infocomm Research, Singapore; Kai Yen, Yong Huat Chew, Institute for Infocomm Research, Singapore
- 3 Maximum Likelihood Sequence Estimation in the Presence of Constant Envelope Interference**
Dennis Hui, R Ramesh, Ericsson Research, USA
- 4 Analysis of Coverage and Interference in Downlink in Urban Nets of Narrow Beam Hexasectorial Supercells**
Fernando Míguez, Pedro de Castro, Telefónica Móviles, Spain, José María Hernando, Universidad Politécnica de Madrid, Spain

5 Multirate Weighted Multistage PIC Receiver for UMTS FDD Uplink

Ana M. Barbancho, Isabel Barbancho, Lorenzo J. Tardón, Universidad de Málaga, Spain

6 A Successive Interference Cancellation Multiuser Detector for MIMO Systems

Prashanth Rao, University of Texas at Arlington, USA

Tuesday, October 7, 15.35 - 17.05 Salon 4 & 5

3Q: Interference Cancellation for Wireless Mobile Radio Systems Posters

- 1 Linear MMSE Chip Equalization and Parallel Interference Cancellation as applied to 1xEV-DV**
Panayiotis D. Papadimitriou, Texas A&M University / Nokia, USA; Prabodh Varshney, Nokia, USA; Mohammad Borran, Rice University, USA
- 2 Single-User Detection Algorithms for Space-Time Block Coded DS/CDMA Transmissions over Frequency-Selective Fading Channels**
Shahrokh Nayeb Nazar, Ioannis Psaromiligkos, McGill University, Canada
- 3 Interference Cancellation for Downlink GSM Network**
Ayman Mostafa, Richard Kobylinski, Mark Austin, Cingular Wireless, USA
- 4 Detecting Active Channels in a DS-CDMA Multiuser Receiver**
Robert M. Taylor, Jr, John Fite, MITRE Corporation, USA
- 5 Weight-Optimizing Partial Parallel Interference Cancellation Based on Channel Estimation for CDMA Systems in Fading Channels**
Chenghua Hu, Tang Youxi, Shaoqian Li, Zhongling Li, University of Electronic Science and Technology of China
- 6 Interference Cancellation for Space-Time Block Coded MC-CDMA over Multipath Fading Channels**
Sassan Iraj, Jorma Lilleberg, Nokia, Finland
- 7 Coded Modulation Assisted Iterative Parallel Interference Cancellation Aided CDMA**
Lajos Hanzo, Hua-Wei, University of Southampton, UK
- 8 Nonlinear Multistage Multiple Access Interference Cancellation Receiver For Asynchronous DS/CDMA Communication Systems**
Xiaoyan Feng, Charalampos C. Tsimenidis, Oliver Hinton, Bayan Sharif, University of Newcastle Upon Tyne, UK
- 9 SIR-based Groupwise Interference Cancellation**
In-Kyeong Choi, Jin-Kyu Choi, Seong Rag Kim, ETRI, Korea
- 10 Performance Comparison of Different Selection Combining Algorithms in Presence of Co-channel Interference**
Lin Yang, Mohamed-Slim Alouini, University of Minnesota, USA
- 11 Blind PARAFAC Receivers for Multiple Access-Multiple Antenna Systems**
Alexandre de Baynast, Rice University, USA; L. De Lathuwer, Université de Cergy-Pontoise, France; B. Aazhang, Rice University, USA

12 Multi-rate receiver design with IF sampling and digital timing correction

Henk Wymeersch, Marc Moeneclaey, University of Ghent, Belgium

Estimation and Tracking for Wireless Communication Systems

Chair: Huseyin Arslan, University of South Florida

Wednesday, October 8, 8.30 – 10.00 Salon 1

4A: Estimation and Tracking for Wireless Communication Systems 1

Chair: Mustafa Matalgah, University of Mississippi, USA

1 Simplified Residual Phase Correction Mechanism for the IEEE 802.11a Standard

Alfonso Troya, Milos Krstic, Koushik Maharatna, IHP, Germany

2 A Bandwidth Efficient Channel Estimation Algorithm for MIMO-SCFDE

Jiun Siew, Justin Coon, Robert Piechocki, Andrew Nix, Mark Beach, Simon Armour, University of Bristol, UK

3 A novel particle filtering approach to blind symbol detection and timing estimation

Tadesse Ghirmai, Monica F. Bugallo, Stony Brook University, USA; Joaquin Miguez, Universidade da Coruña, Spain; Petar Djuric, Stony Brook University, USA

4 Impact of Channel Estimation, MMSE Filter Estimation, and SINR Estimation on W-CDMA Receiver Performance with Multiple-Input Multiple-Output Antenna Systems

Sean M. McBeath, Mansoor Ahmed, Kamyar Rohani, Motorola Labs, USA

5 Blind Equalization of Fast Fading Ricean Channels via the EMV Algorithm

Hoang Nguyen, Bernard C. Levy, University of California, Davis, USA

6 Performance of Multiuser Detection with Pilot-Symbol-Assisted Channel Estimation

Yao Ma, Iowa State University, USA; Robert Schober, University of British Columbia, Canada; Teng Joon Lim, Subbarayan Pasupathy, University of Toronto, Canada

Wednesday, October 8, 10.30 – 12.15 Salon 1

5A: Estimation and Tracking for Wireless Communication Systems 2

Chair: Albert Chen, Integrated System Solution Corp./ALinks Communications Inc., USA

1 Totally Blind APP Channel Estimation with Higher Order Modulation Schemes

Frieder Sanzi, Marc C. Necker, University of Stuttgart, Germany

2 2GHz MIMO channel model from experimental outdoor data analysis in UMTS

Margarita Cabrera, Technical University of Catalonia, Spain; Miquel Payaro, CTTC, Spain; Josep Vidal, Technical University of Catalonia, Spain; Mythri Hunukumbure, Mark Beach, University of Bristol, UK

3 Multiuser Channel Estimation for CDMA Systems over Doubly-Selective Fading Channels

Jingxian Wu, Chengshan Xiao, University of Missouri-Columbia, USA; Khaled Ben Letaief, Hong Kong University of Science & Technology, Hong Kong

4 Non-coherent estimator-correlators for unresolved multipath Ricean channels

Florence Danilo-Lemoine, Carleton University, Canada; Harry Leib, McGill University, Canada

5 MIMO Channel Estimation in Correlated Fading Environments

Mario Kiessling, Joachim Speidel, University of Stuttgart, Germany

6 Level Crossing Rate Estimation with A Doppler Adaptive Noise Suppression Process in Frequency Domain

Goohyun Park, Daesik Hong, Changeon Kang, Yonsei University, Korea

Wednesday, October 8, 13.45 – 15.30 Salon 1

6A: Estimation and Tracking for Wireless Communication Systems 3

Chair: Jian-Ching Guey, Ericsson Research, USA

1 OFDM Frequency Offset Estimator Using PN Sequences and Its Improvement

Chunlin Yan, University of Electronic Sci. &Tech., China

2 Channel Estimation Improvement for Multi-Carrier DS-CDMA

Jiann-Ching Guey, Ericsson Research, USA

3 Channel Estimation for OFDM Systems with Multiple Transmit Antennas by Filtering in Time and Frequency

Gunther Auer, DoCoMo Euro-Labs, Germany

4 Generalized blind subspace channel estimation

Wei Kang, Benoit Champagne, McGill University, Canada

5 Performance Evaluation of Channel Estimation Techniques in a Multiple Antenna OFDM System

Alex S.H. Dowler, Andrew Nix, University of Bristol, UK

6 Antenna Array Training and Adaptation Techniques in an Unpredictable and Uncontrolled Interference Environment

F. Siddiqui, V. Sreng, F. Danilo-Lemoine, D. Falconer, Carleton University, Canada

Wednesday, October 8, 16.00 – 17.45 Salon 4 & 5

7Q: Estimation and Tracking for Wireless Communication Systems Posters

1 Performance Evaluation of a Data-Derived Iterative Channel Estimator for a COFDM System with Receive Diversity

Alex S.H. Dowler, Andrew Nix, University of Bristol, UK

2 Synchronization and Channel Estimation for TDS-OFDM Systems

Zheng Zi-Wei, Tsinghua University / Dalian Maritime University, China; Yang ZhiXing, Tsinghua University, China; Pan ChangYong, Zhu Yi-Sheng, Dalian Maritime University, China

3 Pseudo-Pilot OFDM Scheme for 802.11a and R/A in DSRC Applications

Salvador Sibecas, Celestino A. Corral, Shahriar Emami, Glafkos Stratis, Gregg Rasor, Motorola labs, USA

4 Best Linear Unbiased Channel Estimation for Frequency Selective Multipath Channels with Long Delay Spreads

Christopher Pladdy, Serdar Özen, Mark Fimoff, Sreenivasa Nerayanuru, Zenith Electronics Corporation, USA; Michael Zoltowski, Purdue University, USA

5 Channel Estimation for Asynchronous CDMA Systems in Time-Varying Multipath Channels

Deva K. Borah, New Mexico State University, USA

6 Location-Aided RAKE Receiver Delay Tracking

Debarag Banerjee, Arogyaswami Paulraj, Stanford University, USA

7 Joint Common-Dedicated Pilots Based Estimation of Time-Varying Channels for W-CDMA Receivers

Giuseppe Montalbano, Philips Semiconductors, France; Dirk Slock, Eurecom Institute, France

8 Channel Estimation for Layered Space-Time Systems in Time-Varying Frequency Selective Wireless Channels

Ming Fei Siyau, Philip Nobles, Richard Frank Ormondroyd, Cranfield University, UK

9 Joint Kalman Channel Estimation and Equalization for the UMTS FDD Downlink

Heino Gerlach, Siemens AG, Germany; Dirk Dahlhaus, Mauro Pesce, Swiss Federal Institute of Technology, Switzerland; Wen Xu, Siemens AG, Germany

10 Channel Estimation with Power-Controlled Pilot Symbols and Decision-Directed Reference Symbols

Jie Zhu, Wookwon Lee, University of Arkansas, USA

11 Mobile Tracking and Resource Reservation Scheme for Cellular Networks

Subbiah Shenbagaraman, Balakrishnan Prabhakaran, Subbarayan Venkatesan, University of Texas at Dallas, USA

12 Optimized Iterative Channel Estimation for Future MIMO Application

Yong Sun, Mong Suan Yee, Magnus Sandell, Toshiba Research Europe, UK

13 Channel Estimation and Prediction for Adaptive OFDM Downlinks

Daniel Aronsson, Mikael Sternad, Uppsala University, Sweden

Emerging Multiple Access Technologies

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

Tuesday, October 7, 10.15 – 12.00 Salon 2

1B: Emerging Multiple Access Technologies 1: UWB & Pulse Radio

Chair: Richard Yao, Microsoft Research Asia

1 Multi-band Coded UWB System

Xingxin Gao, Tsinghua University, China, Richard Yao, Microsoft Research Asia, China, Zhenming Feng, Tsinghua University, China

2 An Efficient Time-Domain Ray Model for UWB Indoor Multipath Propagation Channel

Richard Yao, Microsoft Research Asia, China, Zhenqi Chen, Tsinghua University, China, Wenwu Zhu, Microsoft Research China, China

3 On the Power Spectral Density of Wireless Multiple-Access UWB Impulse Radio under Realistic Propagation Conditions

Ali Taha, Keith Chugg, University of Southern California, USA

4 Architectures for Ultra-Wideband Radio Receivers

Raul Blazquez, Fred Lee, Puneet Newaskar, Johnna Powell, Anantha Chandrakasan, David Wentzloff, Massachusetts Institute of Technology, USA

5 Effects of Hopping Codes in TH-SS UWB Signals

Wei-De Wu, National Tsing Hua University, Taiwan; Chung-Hsuan Wang, Chung Yuan Christian University, Taiwan; Chi-chao Chao, National Tsing Hua University, Taiwan

6 Integrating UWB radio access procedures with a stateless IP QoS paradigm

Nicola BLEFARI-MELAZZI, University of Roma Tor Vergata, Italy; Francesca Cuomo, University of Rome La Sapienza, Italy; Mauro Femminella, University of Perugia, Italy; Cristina Martello, University of Rome La Sapienza, Italy

7 Efficient Timing Acquisition in Dense Multipath for UWB Communications

Zhi Tian, Michigan Technological University, USA; Vincenzo Lottici, University of Pisa, Italy

Tuesday, October 7, 13.30 – 15.15 Salon 2

2B: Emerging Multiple Access Technologies 2: Advancement in Multiple Access Technologies

Chair: David Lin, National Chiao Tung University, Taiwan

1 Chip Interleaving for Performance Improvement of Coded DS-CDMA Systems in Rayleigh Fading Channels

Yu-Nan Lin, David Lin, National Chiao Tung University, Taiwan

2 Designing a wireless network with directional antennas: frequency division issue

Yiwen Wu, Joseph Hui, Arizona State University, USA

3 A Low Complexity Adaptive Beamformer for OFDM

James P. Duniak, MITRE Corporation, USA

4 Layering Techniques for Space-Time Communication in Multi-User Networks

B. Farhang-Boroujeny, University of Utah, USA; Quentin Spencer, Lee Swindlehurst, Brigham Young University

5 Performance Evaluation of Quasi-FIFO Back-off Scheme for Wireless Access Networks

Yung-Fang Chen, National Central University, Taiwan; Chih-Peng Li, National Sun Yat-Sen University, Taiwan

6 Interference-Free Air-Link Technologies to Promise a CDMA with Noise-Limited Performance

Hsiao-Hwa Chen, National Sun Yat-Sen University, Taiwan

- 7 Embedding and Detection of Side Information for Peak-to-Average Power Ratio Reduction of an OFDM Signal using Partial Transmit Sequences**
Chih-Chun Feng, Industrial Technology Research Institute, Taiwan; Yue-Ting Wu, Chong-Yung Chi, National Tsing Hua University, Taiwan

Tuesday, October 7, 15.35 – 17.05 Salon 4 & 5

3P: Emerging MAC Posters

- 1 Network Performance of Asynchronous UTRA-like FDD/CDMA Systems using Loosely Synchronised Spreading Codes**
Song Ni, Hua Wei, Jonathan S. Blogh, Lajos Hanzo, University of Southampton, UK
- 2 A CDMA-MIMO System with Multiple-Dimension-Decorrelating-Detectors**
Hiroki Inokura, Hosei University, Japan; Mitsuhiro Tomita, Tokyo University of Technology, Japan; Noriyoshi Kuroyanagi, NKT-Lab, Japan; Kohei Otake, Hosei University, Japan; Satoru

Ozawa, Tokyo University of Technology, Japan; Naoki Suehiro, Tsukuba University, Japan

- 3 Interference Analysis of TDD-CDMA Systems with Directional Antennas**
Li-Chun Wang, Shi-Yen Huang, Yu-Chee Tseng, National Chiao-Tung University, Taiwan
- 4 A Multi-carrier CDMA System Design Based on Orthogonal Complementary Codes**
Mario Magana, Huaping Liu, Oregon State University, USA
- 5 Multi-channel MAC Protocol for Mobile Ad Hoc Networks**
Nakjung Choi, Yongho Seok, Yanghee Choi, Seoul National University, Korea
- 6 An Adaptive MAC Protocol for Ad-Hoc Wireless LANs**
Petros Nicosopolitidis, Georgios Papadimitriou, A. S. Pomportsis, Aristotle University, Greece
- 7 A Novel Scheme for Improving Good Throughput Performance in Wireless Local Area Networks**
Song Ci, Stephen Turner, University of Michigan-Flint, USA

MAC Protocols for Wireless Networks

Chair: Yuguang (Mike) Fang, University of Florida

Wednesday, October 8, 8.30 – 10.00 Salon 2

4B: MAC Protocols for Wireless Networks 1

Chair: TBA

- 1 Downlink Scheduling in a Cellular Network for Quality of Service Assurance**
Dapeng Wu, Carnegie Mellon University, USA
- 2 A Jamming-Based MAC Protocol for Wireless Multihop Ad Hoc Networks**
Shiang-Rung Ye, You-Chiun Wang, Prof Yu-Chee Tseng, National Chiao-Tung University, Taiwan
- 3 Analysis of priority mechanisms based on differentiated Inter Frame Spacing in CSMA-CA**
Giuseppe Bianchi, Ilenia Tinnirello, University of Palermo, Italy
- 4 The Analysis of Power Controlled MAC Layer for Wireless Ad Hoc Networks**
Hazer Inaltekin, Zygmunt J. Haas, Cornell University, USA
- 5 A New Scheme for Controlling Air Time Usage in IEEE 802.11 Wireless LANs**
Chun-Ting Chou, Kang G. Shin, University of Michigan, USA
- 6 Optimal Opportunistic Scheduling in Wireless Networks**
Ness Shroff, Purdue University, USA; Xin Liu, University of Illinois, USA; Edwin Chong, Colorado State University, USA
- 7 Frequency Assignment for Multi-Cell IEEE 802.11 Wireless Networks**
Kin Leung, Bell Labs, Lucent Technologies, USA; Byoung-Jo J. Kim, AT&T Labs, USA

Wednesday, October 8, 10.30 – 12.15 Salon 2

5B: MAC Protocols for Wireless Networks 2

Chair: TBA

- 1 Explicit and Implicit Pipelining for Wireless Medium Access Control**
Xue Yang, Nitin Vaidya, University of Illinois at Urbana-Champaign, USA
- 2 Capacity and QoS Analysis for a Novel Packet Based Wireless Access System**
Christian Schlegel, University of Alberta, Canada, Roland Kempter, University of Utah, USA
- 3 Spatial Reuse in Wireless Ad-hoc Networks**
Xingang Guo, Intel Corp., USA
- 4 A Multi-Layered Architecture and Protocols for Large-Scale Wireless Sensor Networks**
Jin Ding, Washington State University, USA; Krishna M. Sivalingam, UMBC, USA; Raghava Kashyapa, Washington State University, USA; Jianchuan Lu, The South West Institute of Electronic Technology, China
- 5 NICER- A Distributed Wireless Medium Access Control Protocol in Mobile Ad Hoc Networks with Multimedia Traffic**
Anderson Chen, Li-Chun Wang, Chung Wei Wang, National Chiao Tung University, Taiwan; David S. L. Wei, Fordham University, USA
- 6 Saturation Performance Metrics of the IEEE 802.11 MAC**
Yang Xiao, The University of Memphis, USA

Adaptation of Wireless Systems and Related Parameters Estimation

Chair: Huseyin Arslan, University of South Florida

Wednesday, October 8, 16.00 – 17.45 Salon 2

7B: Adaptation of Wireless Systems and Related Parameters Estimation 1

Chair: Chengshan Xiao, University of Missouri-Columbia, USA

- 1 Multimode Transmission Using Wavelet Packet Modulation and OFDM**
Eiji Okamoto, Nagoya Institute of Technology, Japan
- 2 A Linear Programming Algorithm for a Grouped MC-CDMA System**
Moti Tabulo, David Laurenson, Stephen McLaughlin, Emad Al-Susa, University of Edinburgh, UK
- 3 A Minimum Variance Power Update Algorithm for Wireless Networks through Signal-to-Noise-Ratio Estimation**
Ananth Subramanian, Nima Khajehnouri, Ali Sayed, UCLA, USA
- 4 Interference Avoidance and Power Control for Uplink CDMA Systems**
Dimitrie Popescu, University of Texas, USA; Christopher Rose, WINLAB at Rutgers University, USA
- 5 Adaptive Clipping Technique for Reducing PAPR on OFDM Systems**
Hyungjin Kim; Seong Chul Cho, Hyun Seo Oh, ETRI, Korea, Jae Min Ahn, Chungnam National University, Korea
- 6 Subband Bit and Power Loading For Adaptive OFDM**
Ming Lei, Beijing Univ. of Posts & Telecommunications, China

Thursday, October 9, 8.30 – 10.00 Salon 2

8B: Adaptation of Wireless Systems and Related Parameters Estimation 2

Chair: Mustafa Matalgah, University of Mississippi, USA

- 1 Burst-by-burst Adaptive Joint-Detection CDMA/H.26L Based Wireless Video Telephony using TTCM and LDPC Codes**
Jin-Yee Chung, Feng Guo, Michael K. Ng, Lajos Hanzo, University of Southampton, UK
- 2 Space-Time Block Coded and IQ-interleaved TCM, TTCM, BICM and BICM-ID Assisted OFDM**
Michael K. Ng, Tong-Hooi Liew, Lajos Hanzo, University of Southampton, UK
- 3 The JADE-Estimated CM Array for Correlated Cochannel Signal Recovery**
Chaiyod Pirak, Somchai Jitapunkul, Chulalongkorn University, Thailand
- 4 An Adaptive Subcarrier Allocation Algorithm for Multiuser OFDM System**
Xiaowen Liang, University of Science and Technology, China

5 A New Link Layer Protocol for Wireless Correlated Fading

Haitao Lin, Sajal Das, University of Texas at Arlington, USA

6 Variable-Rate Variable-Power Hybrid M-FSK M-QAM for Fading Channels

Fadel Digham, Mohamed-Slim Alouini, University of Minnesota, USA

Wednesday, October 8, 10.30 – 12.15 Salon 4 & 5

5Q: Adaptation of Wireless Systems and Related Parameters Estimation Posters

- 1 A link adaptation strategy for wireless multimedia data transmission**
Charly Poulliat, Inbar Fijalkow, David Declercq, University of Cergy Pontoise, France
- 2 Speed Estimation Techniques in Cellular Systems: Unified Performance Analysis**
Ali Abdi, Hong Zhang, New Jersey Institute of Technology, USA; Cihan Tepedelenlioglu, Arizona State University, USA
- 3 Analysis of an Adaptive QAM Scheme with Non-zero Delay for Rayleigh Fading Channels**
Ian Holland, Hans-Juergen Zepernick, Manora Caldera, Western Australian Telecommunications Research Institute, Australia
- 4 Adaptive Trellis Coded Modulation over Predicted Flat Fading Channels**
Sorour Falahati, Mei Hong, Uppsala University, Sweden; Arne Svensson, Chalmers University of Technology, Sweden; Mikael Sternad, Uppsala University, Sweden
- 5 Cross-layer Optimization Combining Channel Estimation and Position Determination in Multihop Wireless Networks, Cellular and Adhoc**
Van Duc Nguyen, University of Hannover, Germany
- 6 Sensitivity of Interfering Power Estimation to Combining Strategies in MC-CDMA Systems.**
Thierry Lestable, Alcatel R&I / Supelec, France; Jerome Brouet, Alcatel, France; Armelle Wautier, Jacques Antoine, Lionel Husson, Supelec, France; Vinod Kumar, Alcatel, France
- 7 Power Control for Minimum Outage in Interference-Limited Nakagami Fading Wireless Channels**
Chin Choy Chai, Institute for Infocomm Research, Singapore; Xun Chen, National University of Singapore; Yong Huat Chew, Institute for Infocomm Research, Singapore
- 8 Fairness Enhancement of Link Adaptation Techniques in Wireless Access Networks**
Mohamed Hossam Ahmed, Carleton University, Canada
- 9 Rate Matching Attribute Settings and Error Rate Performance Sensitivity for Selected UMTS FDD Services**
Stephen Aftelak, David Bhatoolaul, Motorola Ltd., UK

Access Protocols and Scheduling for Wireless Systems

Co-Chairs: Romano Fantacci, Universita' degli Studi di Firenze and
Giovanni Giambene, Universita' degli Studi di Siena

Thursday, October 9, 10.30 – 12.15 Salon 2

9B: Access Protocols and Scheduling for Wireless Systems 1: Physical and Link Layer Schemes

Chair: Victor Leung, University of British Columbia,
Canada

- 1 Downlink Scheduling for CDMA Packet Data Systems with Interference Cancellation**
Sonia Aissa, University of Quebec; Amine Maaref, INRS-Telecommunications, Canada
- 2 Investigating MAC-layer Schemes to Promote Doze Mode in 802.11-based WLANs**
Valeria Baiamonte, Carla-Fabiana Chiasserini, Politecnico di Torino, Italy
- 3 Proportional Fair Scheduling for Wireless Communication with Multiple Transmit and Receive Antennas**
Taewon Park, Oh-Soon Shin, Seoul National University, Korea
- 4 On UMTS-HSDPA TCP Throughput with Scheduling and Hybrid ARQ**
Haitao Zheng, Harish Viswanathan, Lucent Technologies, USA
- 5 Optimized Multi-Antenna Power Allocation for Spatial Signal Shaping in ad-hoc Networks with Multiple Access Interference**
Enzo Baccarelli, Mauro Biagi, University of Rome, Italy
- 6 Radio Resource Management and Power Control for W-CDMA Uplink with High Data Rate Packet Transmission**
Yoshitaka Hara, Mitsubishi Electric Corporation, Japan
- 7 Scheduling Algorithm in a Point-to-Multipoint Broadband Wireless Access Network**
Shanzeng Guo, William Wong, Communication Research Centre, Canada

Thursday, October 9, 13.45 – 15.30 Salon 2

10B: Access Protocols and Scheduling for Wireless Systems 2:

Resource management and QoS support

Chair: Giovanni Giambene, University of Siena, Italy

- 1 Centralized Algorithm for the Tradeoff between Total Throughput Maximization and Total Power Minimization in Cellular Systems**
Mohammed Elmusrati, Heikki Koivo, Helsinki University of Technology, Finland
- 2 Unified Packet Scheduling Method Considering Delay Requirement in Forward Link**
Yoshiaki Ofuji, Sadayuki Abeta, Mamoru Sawahashi, NTT DoCoMo, Japan
- 3 Efficient Downlink Traffic Management in UTRA-TDD**
Gianpaolo Brogi, Giovanni Giambene, University of Siena, Italy

- 4 Intelligent MBWIMA/UMTS Protocol Using Cascade Fuzzy Logic Control for UTRA TDD Mode**
Jeich Mar, Chih-Yang Kao, Yuan-Ze University, Taiwan

- 5 An Improved Scheduling Algorithm for Providing QoS Support Of Mixed Data Traffic on Wireless Data Systems**

Kerstin B. Johnsson, Donald Cox, Stanford University, USA

- 6 QoS estimation for cellular packet data networks**
Nicolae Cotanis, LCC, USA

- 7 Adaptable Resource Management in Wireless IP Links**
Nikos Passas, Evangelos Zervas, Lazaros Merakos, University of Athens, Greece

Thursday, October 9, 16.00 – 17.45 Salon 2

11B: Access Protocols and Scheduling for Wireless Systems 3: Scheduling in Wireless Systems

Chair: Tommaso Pecorella, CNIT - University of Florence,
Italy

- 1 Energy-Efficient High-Speed Packet Access in WCDMA Systems with Smart Packet Dispatching**
Vinh Van Phan, Ramin Baghaie, Nokia Networks, Finland, Savo Glisic, University of Oulu, Finland
- 2 A Novel Priority Scheduling Scheme for Ad Hoc Networks**
Jun Yin, Qing-An Zeng, Dharma Agrawal, University of Cincinnati, USA
- 3 An Efficient Soft Admission Control Technique for Wireless Communications**
Francesco Chiti, Romano Fantacci, G. Mennuti, Daniele Tarchi, University of Florence, Italy
- 4 A Novel Polling-based Scheduling Approach for an Efficient Radio Resource Sharing in Wireless Networks**
Alessandro Andreadis, Giuliano Benelli, Giovanni Giambene, University of Siena, Italy
- 5 The Advance Access Mechanism for Differentiated Service, Power Control, and Radio Efficiency in Ad Hoc MAC Protocols**
Chi-Hsiang Yeh, Queen's ECE, Canada
- 6 Coverage and Capacity Planning for Aircraft In-Cabin Wireless Heterogeneous Networks**
Cristina Parraga Niebla, German Aerospace Center, DLR, Germany
- 7 Analysis of Performance of Proportional Fair Algorithm with Reduced Scheduling Overhead**
Xin Zhang, Yang Da-Cheng, Beijing University, China

Thursday, October 9, 8.30 – 10.00, Salon 4 & 5

8Q: Access Protocols and Scheduling for Wireless Systems Posters: Resource Management and Scheduling in Mobile Communications Systems

- 1 Adaptive Resource Management for Multimedia Wireless Networks**
Mudit Seth, Prof Abraham Fapojuwo, University of Calgary, Canada
- 2 Performance of Call Admission Control Techniques for TD-CDMA Systems**
Simone Redana, POLIMI, Italy, Antonio Capone, Politecnico di Milano, Italy
- 3 Maximum Traffic Scheduling and Capacity Analysis for IEEE 802.15.3 High Data Rate MAC Protocol**
Yi-Hsien Tseng, Hsiao-Kuang Wu, Chen Gen-Huey, National Taiwan University, China
- 4 Call Admission Control for Quality of Service and Revenue Maximization**
Timo Hämäläinen, Jyrki Joutsensalo, Alexandr Sayenko, Timo Viinikainen University of Jyväskylä, Finland
- 5 Uplink Transmission Timing in WCDMA**
Fredrik Gunnarsson, Gunnar Bark, Niclas Wiberg, Eva Englund, Ericsson Research, Sweden, David Törnqvist, Erik Geijer Lundin, Linköping University
- 6 Joint Scheduling and Base Station Assignment for Packet Data Transmission in CDMA Networks**
Christian Makaya, Sonia Aissa, University of Quebec; INRS-Telecommunications, Canada
- 7 Downlink radio resource control for OFDMA**
Guoqing Li, Hui Liu, University of Washington, USA
- 8 QoS-Aware Resource Allocation for Slowly Time-Varying Channels**
Guerino Giancola, Luca De Nardis, Maria-Gabriella Di Benedetto, University of Rome La Sapienza, Italy
- 9 eCASA: an Easy Context-Aware System Architecture**
Andrea Detti, University of Rome "Tor Vergata", Italy, Fabrizio Davide, Giovanni Cortese, Telecom Italia Learning Services, Italy
- 10 Optimal Checking Sequence during Long Fading Interval for Wireless Systems**
Yeong-Hyeon Kwon, Mi-Kyung Oh, Dong-Jo Park, KAIST, Korea
- 11 Link and System Performance Aspects of Proportional Fair Packet Scheduling in WCDMA/HSDPA**
Troels Kolding, Nokia Networks, Denmark

Advances of MIMO and Space-Time Coding and Signal Processing

Chair: Ayman Naguib, Qualcomm

Thursday, October 9, 10.30 – 12.15 Salon 3

9C: Advances of MIMO and Space-Time Coding and Signal Processing 1

Chair: TBA

- 1 Performance Analysis of Space-Time Codes in the Presence of Spatio-Temporal Correlation**
Majid Fozunbal, Steven McLaughlin, Ronald W. Schafer, Georgia Institute of Technology, USA
- 2 On a Class of Non-Orthogonal Space-Time Block Codes with Linear Decoding Complexity**
Lori Dalton, Costas Georgiades, Texas A&M University, USA
- 3 Fast algorithms for antenna selection in MIMO systems**
Yang-Seok Choi, ViVATO, Inc., USA; Andreas Molisch, Mitsubishi Electric Research Laboratory, USA; Moe Win, Massachusetts Institute of Technology, USA; Jack Winters, Jack Winters Communications, LLC, USA
- 4 Analytical Performance of MIMO MMSE Receivers in Correlated Rayleigh Fading Environments**
Mario Kiessling, Joachim Speidel, Institute of Telecommunications, University of Stuttgart, Germany
- 5 Multiuser Scheduling for MIMO Wireless Systems**
Defne Aktas, Hesham El Gamal, The Ohio State University, USA
- 6 Implementation of Space-Time Coding on OSU Narrowband Testbed**
Lai Wei, The Ohio State University, USA; Parul Gupta, Michael Fitz, University of California Los Angeles, USA; Oscar Takeshita, The Ohio State University, USA; Weijun Zhu, University of California Los Angeles, USA

Thursday, October 9, 13.45 – 15.30 Salon 3

10C: Advances of MIMO and Space-Time Coding and Signal Processing 2

Chair: TBA

- 1 On the design of quasi-orthogonal constellations: Filling the empty threads**
Mohamed Oussama Damen, University of Alberta, Canada; Hesham El Gamal, Ohio-State University, USA; Normam C Beaulieu, University of Alberta, Canada
- 2 Space Frequency Block Coding in the Uplink of Broadband MC-CDMA Mobile Radio Systems with Pre-Equalization**
Stefan Kaiser, German Aerospace Center, DLR, Germany
- 3 Advanced Opportunistic Beamforming**
Rajiv Laroia, Murari Srinivasan, Flarion Technologies, USA
- 4 Capacity of a Gaussian MIMO channel with nonzero mean**
Sivarama Venkatesan, Steven Simon, Reinaldo Valenzuela, Lucent Technologies, USA
- 5 Further results for space-time coding for continuous phase.**
Michael Fitz, Univ. of California Los Angeles, USA; Xiaoxia Zhang, Qualcomm Inc., USA
- 6 On the Performance of Space-Time Codes over Correlated Rayleigh Fading Channels**
Jibing Wang, UCLA, USA; Marvin Simon, Jet Propulsion Laboratory, USA; Michael Fitz, Kung Yao, UCLA, USA
- 7 COSFA: An Efficient MIMO/OFDM Scheme for Rate Adaptive Systems**
Tamer Kadous, Qualcomm, Inc, USA

Wireless LAN/Cellular Internetworking

Chair: Apostolis Salkintzis, Motorola GTSS/GSD Vancouver

Thursday, October 9, 16.00 – 17.45, Salon 3

Session 11C

Chair: Apostolis Salkintzis, Motorola

- 1 A New Method To Support Vertical Handover Between WLAN And UMTS Networks Using SCTP**
Victor Leung, Mary Li Ma, The University of British Columbia, Canada; Tejinder Randhawa, New Media Innovation Center, Canada
- 2 The EAP-GPRS Protocol for Tightly Coupled WLANs and Cellular Data Networks**
Apostolis Salkintzis, Motorola Inc., Greece
- 3 UMTS Signaling over 802.11 Wireless LAN**
Daniel Wong, Melbourne Barton, Byungsuk Kim, Vijay Varma, Sudha Ramesh, Gary Hayward, Telecordia, USA; J. Friedhoffer, Laboratory for Telecommunications Sciences, USA
- 4 3G Interworking with WLAN QoS 802.11e**
Eero Walleni, Nokia Oyj, Finland; Timo Hämäläinen, Timo Nihtila, Jyrki Joutsensalo, University of Jyväskylä, Finland

- 5 Evaluation of interoperability mechanisms for coexisting HSDPA and WLAN enhanced with MTMR techniques**
Jeremy A. Gosteau, Remy Pintenot, Motorola, France; Tarek Al-Gazawi, Fotis Lazarakis, Kostas Peppas, NTUA/ICCS, Greece; Angeliki Alexiou, Lucent Technologies, UK
- 6 Analysis of Coexistence Strategies for Cellular and Wireless Local Area Networks**
Fatih Capar, Ihan Martoyo, Timo Weiss, and Friedrich Jondral, University of Karlsruhe, Germany
- 7 Capacity of a Cellular Data System with 3G/WLAN Interworking**
Hongbo Liu, Hamsini Bhaskaran, Dipankar Raychaudhuri, Rutgers University, USA; Shaily Verma, Thomson Multimedia Inc., USA

Next Generation Wireless Systems

Chair: Hasan Cam, Arizona State University, USA

Tuesday, October 7, 10.15 – 12.00, Salon 6

Session 1D

Chair: Hasan Cam, Arizona State University, USA

- 1 Low Complexity Encoding of Regular Low Density Parity Check Codes**
Suchang Chae, ETRI, Korea
- 2 On the UMTS RLC Parameters Setting and their Impact on Higher Layers Performance**
Michele Rossi, Lorenzo Scaranari, Michele Zorzi, University of Ferrara, Italy
- 3 A Simulation Study on Time-Frequency Localized CDMA Using MMSE Per Carrier Equalization**
Mika Lasanen, Antti Anttonen, Mauri Nissila, VTT Electronics, Finland
- 4 Performance Analysis of Macroscopic Diversity Combining of MIMO Signals in Mobile Communications**
Wun-Cheol Jeong, Jong-Moon Chung, Dongfang Liu, Oklahoma State University, USA

- 5 Using Remaining Battery lifetime information and Relaying to decrease Outage Probability of a Mobile Terminal**
Shashidhar Lakkavalli, Suresh Singh, Portland State University, USA
- 6 INTERMITSTATIONS: The Anywhere/Manytime and Manywhere/Manytime Wireless Communication Approaches**
Genaro Hernandez-Valdez, Felipe A. Cruz-Pérez, Domingo Lara-Rodríguez, CINVESTAV-IPN, Mexico
- 7 An Iterative Process For Adaptive Optimisation of Turbo**
Kingsley Kwajwo Oteng-Amoako, University of NSW, Australia
- 8 Geocasting in Cellular Ad Hoc Augmented Networks**
Chi-Tung Chen, Sirin Tekinay, Symeon Papavassiliou, New Jersey Institute of Technology, USA

High Speed Wireless Networks, 100 Mb/s and beyond

Chair: Ahmed Tewfik, University of Minnesota

Tuesday, October 8, 13.30 – 15.15 Salon 6

Session 2D

Chair: Ahmed Tewfik, University of Minnesota

- 1 Experiments on Throughput Performance above 100-Mbps in Forward Link for VSF-OFCDM Broadband Wireless Access**
Yoshihisa Kishiyama, Noriyuki Maeda, Kenichi Higuchi, Hiroyuki Atarashi, Mamoru Sawahashi, NTT DoCoMo, China

- 2 MAC Performance Analysis and Enhancement Over 100Mbps Data Rates for IEEE 802.11**
Yang Xiao, University of Memphis, USA
- 3 156Mbps Point-to-Multipoint Ultra High-speed Hotspot Communication Prototype for Future Millimeter Wireless Communication Systems**
Hiroschi Harada, Communications Research Laboratory, Japan

4 Performance of Coherent UWB Rake Receivers with Channel Estimators

Bartosz Mielczarek, Matts-Ola Wessman, Arne Svensson, Chalmers University of Technology, Sweden

5 Pilot Assisted Multi-User UWB Communications

Ebrahim Saberinia, Ahmed Tewfik, Rahul Gupta, University of Minnesota, USA

Wednesday, October 8, 13.45 – 15.30 Salon 4 & 5

6Q: Next Generation and High Speed Networks Posters

1 The Use of Intelligently Deployed Fixed Relays to Improve the Performance of a UTRA-TDD System

Eustace Kigham Tameh, University of Bristol, UK; Araceli Molina, Pro Vision Communications, UK; Andrew Nix, University of Bristol, UK

2 A Low-Complexity and Efficient Blind Modulation Detection Algorithm for Adaptive OFDM Systems

Sharath B. Reddy, Tevfik Yucek, University of South Florida, USA

3 Power and Sub-Carrier Allocation for Multi-rate MC-CDMA System

Ashwin Natarajan, Praveen Sampath, Hasan Cam, Arizona State University, USA

4 A Simple Multiple-Antenna Ultra Wide Band Transceiver scheme for 4th Generation WLAN

Mauro Biagi, Enzo Baccarelli, University of Rome La Sapienza, Italy

5 Hierarchical ICI Canceller for a Novel SDM-COFDM Scheme

Yusuke Asai, Daisei Uchida, Satoshi Kurosaki, Takatoshi Sugiyama, Masahiro Umehira, NTT, Japan

6 Call Admission Control Suitable for Two-hop CDMA Cellular Systems

Koji Yamamoto, Susumu Yoshida, Kyoto University, Japan

7 Hybrid Predictive Handover in Future Mobile Networks

Siamäk Naghian, Nokia Networks, Finland

Cooperative Networks

Chair: Bassam Hashem, Nortel Canada

Wednesday, October 8, 8.30 – 10.00 Salon 6

Session 4D

Chair: Bassam Hashem, Nortel Canada

1 Performance of Cellular Networks with Relays and Centralized Scheduling

Sayandev Mukherjee, Harish Viswanathan, Lucent Technologies, USA

2 Adaptive Management of Network Resources

Daniel O'Neill, David Julian, Stephen Boyd, Stanford University, USA

3 Performance Analysis of a Multiple Access Protocol for Voice and Data Support in Broadband Wireless LANs

Romano Fantacci, University of Florence, Italy; Tommaso Pecorella, CNIT, Italy; Gianluca Vannuccini, Gabriele Vestri, University of Florence, Italy

4 A Relaying Algorithm for Multi-hop TDMA WLANs using Diversity

Shoae Hares, Halim Yanikomeroglu, Carleton University, Canada; Bassam Hashem, Sagacity, Canada

5 Dynamic Re-configuration in 3G Networks based on Adaptive Time/Frequency Filtering

Flavio De Angelis, Ibrahim Habib, The City College of New York, USA; Paolo Emilio Barbano, Yale University, USA

6 Relayer Selection Strategies in Peer-to-Peer Relaying in Cellular Radio Networks

Van Sreng, Halim Yanikomeroglu, David Falconer, Carleton University, Canada

IP Mobility

Chair: Muhammad Jaseemuddin, Ryerson University, Hong Yi-Li, Nortel Networks, Canada & Junaid Zubairi, SUNY at Fredonia, USA

Wednesday, October 8, 13.45 – 15.30 Salon 6

6D: IP Mobility 1

Chair: Junaid Zubairi, SUNY at Fredonia, USA

1 Study of Mobility Management for the IP-based IMT Platform Architecture

Osvaldo A. Gonzalez, Masahiro Maeda, Ryutarō Hamasaki, Shintaro Uno, Motorola, Japan; Takatoshi Okagawa, Katsutoshi Nishida, NTT DoCoMo, Japan

2 A time efficient context transfer method with selective reliability for seamless IP mobility

Madjid F. Nakhjiri, Motorola, USA

3 Dynamic and Distributed Domain-based Mobility Management for Mobile IPv6

Pyo Chang Woo, Jie Li, Hisao Kameda, University of Tsukuba, Japan

4 Evaluation of End-to-end QoS Support for Mobile Hosts in IPv6 with IEEE802.11e

Wei Wu, National University of Singapore, Singapore; Winston Seah, Institute for Infocomm Research, Singapore

5 Prediction-Based Admission Control for DiffServ Wireless Internet

Majid Ghaderi, Joe Capka, Raouf Boutaba, University of Waterloo, Canada

6 Mobility Support for Next-Generation Internet Signaling Protocols

Xiaoming Fu, University of Goettingen, Germany; Henning Schulzrinne, Columbia University, USA; Hannes Tschofenig, Siemens AG, Germany

7 Network Mobility Protocol based on LIN6

Takuma Oiwa, Keio University, Japan

Wednesday, October 8, 16.00 – 17.45 Salon 6

7D: IP Mobility 2

Chair: Junaid Zubairi, SUNY at Fredonia, USA

1 A Hybrid Workload Model for Wireless Metropolitan Area Networks

Matthias Hollick, Tronje Krop, Jens Schmitt, Darmstadt University of Technology, Germany; Hans-Peter Huth, Siemens AG, Germany; Ralf Steinmetz, Darmstadt University of Technology, Germany

2 LNS-SID Mobility Management in Dynamic Ad Hoc Networks

Raquel Morera, Anthony McAuley, Telcordia Technologies, USA

3 Simple Mobility Support for Ipv6 Tunnel Mode

Byoung-Jo J. Kim, AT&T Labs, USA; Srividhya Srinivasan, Georgia Institute of Technology, USA

4 Mobile IP version 6, MIPv6 Route Optimization Security Design

Pekka Nikander, Ericsson Research Nomadiclab, Finland; J. Arkko, T. Aura, Gabriel Montenegro, Sun Microsystems, USA

5 Issues with Nested Mobility

Nagaraja Thanthy, Ravi Bhagavathula, Ravi Pendse, Kamesh Namuduri, Wichita State University, USA

6 Robust Hierarchical Mobile IPv6, RH-MIPv6: An Enhancement for Survivability & Fault-Tolerance in Mobile IP Systems

Taewan You, Sangheon Park, Yanghee Choi, Seoul National University, Korea

7 Micro Mobility Protocol Design and Evaluation: A Parameterized Building Block Approach

Ganesha Bhaskara, Ahmed Helmy, Sandeep Gupta, University of Southern California, USA

Wednesday, October 8, 10.30 – 12.15 Salon 4 & 5

5P: IP Mobility Posters

1 Enhanced Mobility Protocol for Wireless Networks

Patricia Best, Ravi Pendse, Wichita State University, USA

2 A Framework of Enhanced Local Mobility Routing

Xiaoming Wang, Jinhyeock Choi, Samsung Advanced Institute of Technology, Korea

3 Efficient Network Mobility Support using APD protocol

Kyeongjin Lee, Jungsoo Park, Hyoungjun Kim, ETRI, Korea

4 A Zone-Based Shared Tree Multicast Protocol for Mobile Ad Hoc Networks

Aniruddha Rangnekar, Ying Zhang, UMBC, USA; Ali Selcuk, Bilkent University, Turkey; Ali Bicak, UMBC, USA; Vijay Devarapalli, Nokia Research Center, USA; Deepinder Sidhu, UMBC, USA

5 Scalability of mobility signaling in IEEE 802.11 WLAN

Terho M. Hautala, University of Oulu, Finland

6 Mobility Management Based on Mobile IP in Mixed IPv4/IPv6 Networks

Hyun-Ho Choi, Dong-Ho Cho, KAIST, Korea

7 Transport Protocol Performance over BCMP

Nikolaos Georganopoulos, Toshiba Research Europe, UK

8 Mobility Management Method based on the Integration of Mobile IP and Session Initiation Protocol in Next Generation Mobile Data Networks

Hyejeong Lee, KAIST, Korea; Sung Won Lee, Samsung Electronics, Korea; Dong-Ho Cho, KAIST, Korea

9 R-BU: Recursive Binding Update for Route Optimization in Nested Mobile Networks

Ho-sik Cho, Eun Kyoung Paik, Yanghee Choi, Seoul National University, Korea

10A SIP-based Method for Intra-Domain Handoffs

Dimitra Vali, OTE, Greece; Sarantis Paskalis, Alexandros Kaloxylos, Lazaros Merakos, University of Athens, Greece

11 An Architecture for Integrating cdma2000 and 802.11 WLAN Networks

Hamid Syed Mahmood, Nortel Networks, Canada

12 Routing in Hybrid Ad hoc Networks using Service Points

Anders Nilsson, University of Lund, Sweden; Marco Spohn, J.J. Garcia-Luna-Aceves, University of California, Santa Cruz

13A Proposed Routing Procedure based on Ipv6/Ipv4 Address Conversion in IP-based IMT Network Platform, IP2

Takatoshi Okagawa, Katsutoshi Nishida, Akira Miura, NTT DoCoMo, Inc, Japan

Wireless Security

Chair: Farooq Anjum, Telcordia

Tuesday, October 7, 10.15 – 12.00 Salon 7

1E: Wireless Security 1

Chair: Farooq Anjum, Telcordia

1 Transparent end-user authentication information provisioning over heterogeneous networks

Hong Chen, University of Twente, The Netherlands

2 Spatial Role-Based Access Control Model for Wireless Networks

Frode Hansen, Vladimir Oleshchuk, Agder University College, Norway

3 Data Dependent Keying for Wireless Networks

Manish Karir, John S. Baras, University of Maryland, USA

4 Stealth Attacks on Ad-Hoc Wireless Networks

Susanne Wetzel, Stevens Institute of Technology, USA; Markus Jakobsson, RSA Security, USA; Bulent Yener, RPI, USA

5 Using constraints to protect personal location information

Anand S. Gajparia, Chris J. Mitchell, Royal Holloway, University of London, UK; Chan Yeun, Toshiba Research Europe Ltd, UK

- 6 User plane Firewall for 3G Mobile Networks**
 Ram Gopal Lakshmi Narayanan, Tat Keung Chan, Ti-Shiang Wang, Nokia Research Center, USA
- 7 Security Model for Routing Attacks in Mobile Ad hoc Networks**
 Sathishkumar Alampalayam, Anup Kumar, University of Louisville, USA

Tuesday, October 8, 13.30 – 15.15 Salon 7

2E:Wireless Security 2

Chair: Farooq Anjum, Telcordia

- 1 Efficient and Secure Time Synchronization Schemes for Wireless Applications**
 Charles Barnett, K.J. Ray Liu, University of Maryland, USA
- 2 Radio Security Module that Enables Global Roaming of SDR Terminal while Complying with Local Radio Regulation**
 Chih Fung Lam, Kei Sakaguchi, Jun-ichi Takada, Kiyomichi Araki, Tokyo Institute of Technology, Japan

- 3 Self-Managed Heterogeneous Certification in Mobile Ad Hoc Networks**
 Weihong Wang, Ying Zhu, Baochun Li, University of Toronto, Canada
- 4 A Simulation Study of Security Performance Using Multipath Routing in Ad Hoc Networks**
 Wenjing Lou, Wei Liu, Yuguang Fang, University of Florida, USA
- 5 SVM-based Intrusion Detection System for Wireless Ad Hoc Networks**
 Hongmei Deng, University of Cincinnati, USA
- 6 Intrusion Detection for Wireless Ad-Hoc Networks**
 Farooq Anjum, Telcordia Technologies, USA; Saswati Sarkar, Arezu Moghadam, University of Pennsylvania, USA
- 7 CDMA Physical Layer Built-in Security Enhancement**
 Jian Ren, Tongtong Li, Michigan State University, USA

Integrated Heterogeneous Wireless Networks

Chair: Hongyi Wu, University of Louisiana

Tuesday, October 7, 15.35 - 17.05 Salon 7

Session 3E

Chair: Hongyi Wu, University of Louisiana

- 1 A Two-Tier Heterogeneous Mobile Ad Hoc Network Architecture and its Load-Balance Routing Problem**
 Chi-Fu Huang, Hung-Wei Lee, Yu-Chee Tseng, National Chiao-Tung University, Taiwan
- 2 Aggregation Tree Construction in Sensor Networks**
 Xiuzhen Cheng, George Washington University, USA; Prof Guoliang Xue, Arizona State University, USA
- 3 On the Throughput Capacity of Hybrid wireless Networks using an L-maximum-hop Routing Strategy**
 Yong Pei, James Modestino, Xiaochun Wang, University of Miami, USA
- 4 Throughput Enhancement in Multi-hop Wireless Ad Hoc Networks**
 Wei Liu, Yuguang Fang, Younggoo Kwon, University of Florida, USA
- 5 Power Performance Comparison of Heterogeneous Wireless Network Interfaces**
 Jean Lorchat, Thomas Noel, Louis Pasteur University, France
- 6 An Adaptive Call Admission and Bandwidth Allocation Scheme for Future Wireless and Mobile Networks**
 Hang Chen, Qing-An Zeng, Dharma Agrawal, University of Cincinnati, USA

6P: Cooperative and Integrated Networks Poster Session

- 1 A Multicast On-demand Mesh-based Routing Protocol in Multihop Mobile Wireless Networks**
 Houada Labiod, Hasnaa Moustafa, ENST, France
- 2 Wireless Channel-Aware Ad Hoc Cross-Layer Protocol with Multi-Route Path Selection Diversity**
 Minyoung Park, Jeff Andrews, Scott Nettles, The University of Texas at Austin, USA

- 3 Group Mobility Management in Wireless Ad Hoc Networks**
 Wen-Tsuen Chen, Po-Yu Chen, National Tsing Hua University, Taiwan, China
- 4 Disjoint Multi-path Source Routing in Ad Hoc Networks: Transport Capacity**
 Nawaporn Wisitpongphan, Ozan Tonguz, Carnegie Mellon University, USA
- 5 On the Performance of Cooperative Diversity Protocols in Practical Wireless Systems**
 Ernesto Zimmermann, Patrick Herhold, Gerhard P. Fettweis, Technische Universitaet Dresden, Germany
- 6 Performance Analysis of Hierarchical Wireless Systems**
 Henrik Persson, Johan M. Karlsson, Lund University, Sweden
- 7 Reducing Handover Time in Heterogeneous Networks**
 Arifon Xhafa, Ozan Tonguz, Carnegie Mellon University, USA
- 8 Smart Traffic Scheduling in 802.11 WLANs with Access Point**
 Marco Bottigliengo, Claudio E. Casetti, Carla-Fabiana Chiasserini, Michela Meo, Politecnico di Torino, Italy
- 9 An Integrated Multi-hop Cellular Data Network**
 Hyunjeong Lee, Chung-Chieh Lee, Northwestern University, USA
- 10 Architecture Considerations and Integrated-Passive-Based Design for a Dual- Mode GPRS-WLAN SiGe RF Transceiver**
 Sotiris Bantas, Yorgos Stratakos, Nick Kanakaris, Yorgos Katsoulis, Pandelis Papadopoulos, Michael Margaras, Helic S.A, Greece
- 11 WLAN-Centric Authentication in Integrated GPRS-WLAN Networks**
 Ming-Chia Jiang, Yi-Wen Liu, Jyh-Cheng Chen, Tsing Hua University, Taiwan

12 Hybrid Coupling Scheme for UMTS and Wireless LAN Interworking

Jee-young Song, KAIST, Korea; Sung Won Lee, Samsung Electronics, Korea; Dong-Ho Cho, KAIST, Korea

13 IEEE 802.11g OFDM WLAN RF Throughput Performance

Ming-Ju Ho, Jing Wang, Kevin Shelby, Proxim Corp, USA

14 Design and Performance of an Enhanced IEEE802.11 MAC Protocol for Ad Hoc Networks

Frank H.P. Fitzek, Diego Angelini, Gianluca Mazzini, Michele Zorzi, University of Ferrara, Italy

Wireless Communications: 3G and Beyond

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

Wednesday, October 8, 8.30 – 10.00 Salon 7

4E: OFDM technology

Chair: Mao-Chao Lin, National Taiwan University, Taiwan

1 An Iterative Approach to Frequency Offset Estimation for Multicarrier Communication Systems

Feng-Tsun Chien, Chien-Hwa Hwang, C.C. Jay Kuo, University of Southern California, USA

2 An Asynchronous Multitone Multiuser Air Interface for High-Speed Uplink Communications

Andrea Tonello, University of Udine, Italy; Antonio Assalini, University of Padova, Italy

3 Novel Sampling Clock Offset Estimation for DVB-T OFDM

Hou-Shin Chen, Yumin Lee, National Taiwan University, Taiwan

4 Modified Guard Band Power Detection Methods for OFDM Frequency Offset Recovery

Yen-Ju Huang, Shyue-Win Wei, National Chi-Nan University, Taiwan

5 Turbo Coded OFDM System with Peak Power Reduction

Mao-Chao Lin, National Taiwan University, Taiwan

6 A Peak-to-Average Power Ratio Reduction Technique for the IEEE 802.11a Wireless LAN

Chin-Liang Wang, Yuan Ouyang, Hsien-Chih Chen, National Tsing Hua University, Taiwan

Wednesday, October 8, 10.30 – 12.15 Salon 7

5E: B3G Wireless

Chair: Christopher Rose, WINLAB at Rutgers University, USA

1 Coverage Prediction of New Elements of Systems Beyond 3G

Grigorios Plitsis, Aachen University, Germany

2 Cost and Reliability Estimation of Radio Access Network Structures for the 4G Systems

Andrey Krendzel, Yevgeni Koucheryavy, Jarmo Harju, Tampere University of Technology, Finland

3 PET: Enhancing TCP performance over 3G & beyond networks

Huikeli Li, University of Melbourne, Australia

4 Performance of UWB PPM in Residential Multipath Environments

Rene Bastidas-Puga, Instituto Tecnológico de Estudios Superiores de Monterrey, Mexico; Fernando Ramírez-Mireles, Ikanos Communications, USA; David Muñoz-Rodríguez, ITESM, Mexico

5 On the complexity of “Always Best Connected” in 4G mobile networks

Vangelis Gazis, Nikos Houssos, Nancy Alonistioti, Lazaros Merakos, University of Athens, Greece

6 Goals of True Broadband's Wireless Next Wave, 4G-5G

Santhi Kumaran, Virendrakumar Srivastava, Senthil Kumaran, Albert Butare, Kigali Institute of Science, Technology and Management, South Africa

7 Write or Radiate? Inscribed Mass and Electromagnetic Channels

Christopher Rose, WINLAB at Rutgers University, USA

Wednesday, October 8, 13.45 – 15.30 Salon 7

6E: 3G Wireless

Chair: Frank Fitzek, Università di Ferrara, Italy

1 TFC Selection for MAC Scheduling in WCDMA

Duan-Shin Lee, Chiung-Sui Liu, National Tsing Hua University, Taiwan

2 Resource Efficient Multicast for Third Generation UMTS Wireless Networks

Charles Barnett, K.J. Ray Liu, University of Maryland, USA

3 An All-MPLS Approach for UMTS 3G Core Networks

Hung-Shih Chueh, Kuo-Chen Wang, National Chiao Tung University, Taiwan

4 Security and Authentication Concepts for UMTS/WLAN Convergence

Frank Fitzek, Università di Ferrara, Italy

5 Soft-Decision Reed-Solomon Decoding Strategies for Code Group Identification and Frame Synchronization in UMTS WCDMA

Shin-Lin Shieh, Shin-Yuan Wang, Benjamin H. Wang, Industrial Technology Research Institute, Taiwan

6 A Software Oriented Modem Architecture for 3G Terminal

Manabu Mukai, Toshiba Corporation, Japan

7 Performance of Common and Dedicated Traffic Channels for Point-to-Multipoint Transmissions in W-CDMA

Robert Rummeler, Hamid Aghvami, King's College London, UK

Wednesday, October 8, 16.00 – 17.45 Salon 7

7E: Advanced Issues in Wireless

Chair: Mario Magana, Oregon State University, USA

1 Game theoretic approach to power control in Cellular CDMA

Sarma Gunturi, Texas Instruments, India; Fernando Paganini, UCLA, USA

2 Optimized Low-Density Parity-Check, LDPC Codes for Bandwidth Efficient Modulation

Yi Yu, Chonbuk National University, Korea

3 I/Q Imbalance Modeling of Quadrature Wireless Transceiver Analog Front-Ends in SIMULINK

Pui-In Mak, Weng-Ieng Mok, Seng-Pan U, R. P. Martins, University of Macau, China

4 Optimal SIR Target Determination for Outer-Loop Control in the W-CDMA System: Inverse SIR Cumulative Distribution Function computation throughout the Newton-Raphson Method

Alvaro Lopez Medrano, TOP Optimized Technologies S.L., Spain

5 Achieving Weighted Fairness for Wireless Multimedia Services

Chih-Yung Shih, National Chiao-Tung University, Taiwan; Ray-Guang Cheng, National Taiwan University of Science and Technology, Taiwan; Chung-Ju Chang, Yih-Shen Chen, National Chiao-Tung University, Taiwan

6 A Flexible Layer One Concept Based on Recursive Systematic Convolutional Code for GERAN

Wen Xu, Xavier Boniface, Siemens AG, Germany

7 Channel Estimation Based on Continuous Pilot Channel with Regression in LAS-CDMA

Gang Wang, Beijing University of Posts & Telecommunications, China; Li Yonghui, Beijing Founder Linkair Communications, INC., China; Jiangbo Dong, Daoben Li, Beijing University of Posts & Telecommunications, China

8 Companding Turbo Decoder

Kai Niu, Beijing University of Posts and Telecommunications, China

Thursday, October 9, 8.30 – 10.00 Salon 7

8E: MUD and Signal Processing Issues

Chair: Yumin Lee, National Taiwan University, Taiwan

1 A Chip-Interleaving Pattern Retaining Orthogonality in DS-CDMA Systems: Application to the Multicode Downlink

Hardouin Eric, Christophe Laot, ENST Bretagne, France

2 Multi-Stage Weighted Interference-Cancellation Equalizer for MIMO Systems

Chen-Chu Hsu, Yumin Lee, National Taiwan University, Taiwan

3 Space-Time Pre-RAKE Multiuser Transmitter Precoding for DS/CDMA Systems

Secin Guncavdi, Alexandra Duel-Hallen, North Carolina State University, USA

4 MMSE Equalisation for UMTS HSDPA

Robert Love, Kenneth Stewart, Raja Bachu, Amitava Ghosh, Motorola, Inc., USA

5 Multi-Stage MMSE Weighted Decision Feedback Multi-User Detector for DS-CDMA and MC-CDMA

Chen-Chu Hsu, Yumin Lee, National Taiwan University, Taiwan

6 A Multicarrier DS-CDMA System Using Both Time-Domain and Frequency-Domain Spreading

Lie-Liang Yang, Lajos Hanzo, University of Southampton, UK

Thursday, October 9, 10.30 – 12.15 Salon 4 & 5

9P: OFDM technology poster

1 Accurate Performance Analysis of Maximum Likelihood Frequency Estimator for OFDM Systems

Kai Yi Fang, Sheen Wern-Ho, Wern Ho Sheen, National Chiao Tung University, Taiwan

2 All Digital Tracking Loop for OFDM Symbol Timing

Minjian Zhao, Aiping Huang, Zhijian Yu, Zhejiang University, China

3 OFDM Clipping Noise Mitigation by A Novel Minimum Clipping Power Loss Scheme

Lei Xia, University of Electronic Science and Technology of China, China

4 Effect of Channel Estimation Error onto the BER Performance of PSAM-OFDM in Rayleigh Fading

Jiming Chen, University of Electronic Science and Technology of China, China

5 High Rate Ultra-Wideband Space Time Coded OFDM

Jia Hou, Chonbuk National University, Korea

6 Analysis and Optimization of Pilot-Symbol-Assisted-Modulation M-QAM for OFDM Systems

Jiming Chen, University of Electronic Science and Technology of China, China

7 An OFDM Transmission Scheme Using Variable-Length Groupwise Orthogonal Code Multiplexing

Seong Keun Oh, Ki Bum Kwon, Myung Hoon Sunwoo, Ajou University, Korea

8 Protection and Transmission of Side Information for Peak-to-Average Power Ratio Reduction of an OFDM Signal using Partial Transmit Sequences

Chih-Chun Feng, Chih-Yaw Wang, Chun-Yu Lin, Yung-Hua Hung, Industrial Technology Research Institute, Taiwan

9 A Low-complexity Equalization Technique for OFDM System in Time-Variant Multipath Channels

Guangjie Li, Hongwei Yang, Liyu Cai, Luoning Gui, Alcatel Shanghai Bell Co. Ltd, China

10A Preamble-Based Cell Searching Technique for OFDM Cellular Systems

Kwang Soon Kim, Kyung Hi Chang, ETRI, Korea; Sung Woong Kim, Yong Soo Cho, Chung-Ang University, Korea

11 Proposal of 1-Cell Reuse OFDM/TDMA using Subcarrier Adaptive Modulation and Multilevel Transmit Power Control for Broadband Wireless Communication Systems

Toshiyuki Nakanishi, Seiichi Sampei, Norihiko Morinaga, Osaka University, Japan

12 Subcarrier allocation for variable-bit rate video streams in wireless OFDM systems

James Gross, Jurka Klaue, Holger Karl, Adam Wolisz, Technical University of Berlin, Germany

13 Attaining both Coverage and High Spectral Efficiency with Adaptive OFDMA Downlinks

Mikael Sternad, Uppsala University, Sweden; Tony Ottosson, Chalmers University of Technology, Sweden; Anders Ahlen, Uppsala University, Sweden; Arne Svensson, Chalmers University of Technology, Sweden

Thursday, October 9, 13.45 – 15.30 Key Wesy

10P: Wireless Signal Processing & Applications Poster

- 1 System Architecture for 3G Wireless Networks in Aircraft**
Axel Jahn, German Aerospace Center (DLR), Germany
- 2 Isotropic Air-interface in TD-SCDMA: Uplink Synchronization Control & its Environment-Dependent Performance Analysis**
Hsiao-Hwa Chen, National Sun Yat-Sen University, Taiwan
- 3 The Performance of Voice over IP over UMTS Downlink Shared Packet Channel under Different Delay Budgets**
Haitao Zheng, Gee Rittenhouse, Mike Recchione, Lucent Technologies Bell Labs, USA
- 4 Combined Fuzzy-based Rate and Selective Power Control in Multimedia CDMA Cellular Systems**
Young-Long Chen, Yung-Sheng Lin, Jyh-Horng Wen, Wei-Min Chang, Liao Jason, National Chung Cheng University, Taiwan
- 5 TD-SCDMA System Level Simulation Platform and Application**
Xuejun Zhang, Philips Research East Asia, China
- 6 Optimization of Effective Data Rate under Rayleigh Multipath Fading in Multimedia DS-CDMA Systems**
Jiabin Liu, Xi'an Jiaotong University, China
- 7 Performance analysis of Turbo Trellis Coded Modulation in Still Image Transmission over Two Typical Channels**
Zhiquan Bai, Shandong University, China
- 8 M-ary MC CDMA in Uplink for Next Generation Mobile Communication**
Lin Wen, Jinkang Zhu, University of Science and Technology of China, China; Elena Costa, Weckerle Martin, Siemens AG, Germany
- 9 Variable Orthogonality Factor: A Simple Interface between Link and System Level Simulation for High Speed Downlink Packet Access**
Alexander Seeger, Siemens Mobile Networks, Germany; Marcin Sikora, University of Notre Dame, USA; Axel Klein, Siemens Mobile Networks, Germany
- 10 Decoding Algorithms for Space-Time Orthogonal Block Codes**
Behrouz Farhang-Boroujeny, University of Utah, USA; Chin Keong Ho, Institute for Communications Research, Singapore
- 11 Development of Receiving Active Phased Array Antenna System using Digital Beamforming for High Altitude Platform Stations to Provide IMT-2000 Service**
Bon-Jun Ku, Jong-Min Park, Yang-Su Kim, Do-Seob Ahn, ETRI, Korea
- 12 Non-Parametric Non-Line-of-Sight Identification**
Sinan Gezici, Hisashi Kobayashi, Vincent Poor, Princeton University, USA
- 13 Near-Optimum Trellis-Coded DS/CDMA Multiuser Communications**
Huang Lee, Kwang-Cheng Chen, National Taiwan University, Taiwan
- 14 Multiuser Detection with Antenna Diversity Reception for Multirate MC-CDMA Uplink Systems**
Chin-Liang Wang, Chih-Chiang Wu, National Tsing-Hua University, Taiwan

Transport Layer Protocols over Wireless Networks

Chair: Miguel Labrador, University of South Florida

Thursday, October 9, 13.45 – 15.30 Salon 7

10E: Transport Layer Protocols over Wireless Networks 1

Chair: Miguel A. Labrador, University of South Florida

- 1 SCTP with an Improved Cookie Mechanism for Wireless Networks through Modeling and Simulation**
Inwhhee Joe, Hanyang University, Korea; Latha Kant, Telcordia Technologies, USA
- 2 Contrasting GPRS and EDGE over TCP/IP on BCCH and non-BCCH Carriers**
Carsten Ball, Kolio Ivanov, Siemens AG, Germany
- 3 Optimizing TCP/IP parameters over GPRS and WLAN networks**
Anna Calveras, Josep Paradells, Carles Gomez, Marisa Catalan, Jose Castor Valles, Universidad Politecnica de Catalunya, Spain
- 4 Optimisation of TCP Performance over EGPRS in Incremental Redundancy Mode**
Mjumo Mzyece, John Dunlop, James Irvine, University of Strathclyde, UK

5 Impact of Soft Handoff on TCP Throughput over CDMA Wireless Cellular Networks

Masashi Sugano, Osaka Prefecture College of Nursing, Japan; Liwei Kou, Takayuki Yamamoto, Masayuki Murata, Osaka University, Japan

6 The Eifel TCP extension over GPRS RLC: Effects of long radio blackouts

Talal Achkar Diab, Phillipe Martins, Phillipe Godlewski, Nicolas Puech, Ecole Nationale Supérieure des Télécommunications, France

Wednesday, October 9, 16.00 – 17.45 Salon 7

11E: Transport layer protocols over wireless networks 2

Chair: Janise McNair, University of Florida, USA

- 1 An Efficient Scheduling Scheme for High Speed IEEE 802.11 WLANs**
Juki Wirawan Tantra, Chuan Heng Foh, Bu Sung Lee, Nanyang Technological University, Singapore
- 2 A 5GHz WLAN MAC Performance Comparison Based on Physical Layer Measurements**
Romain Rollet, Christophe Mangin, Mitsubishi Electric, France

- 3 **Distributed Admission Control via Dual-Queue Management**
Dongsook Kim, Mingyan Liu, University of Michigan, USA
- 4 **Power-Controlled Multiple Access, PCMA in Multi-Service Wireless Networks**
Savvas Gitzenis, Nicholas Bambos, Stanford University, USA
- 5 **Co-channel Interference Avoidance Algorithm**
Yan Li, Stanford University, USA; Xiaowen Wang, Syed Aon Mujtaba, Agere Systems, USA
- 6 **A simple adaptive MAC scheduling scheme for Bluetooth Scatternet**
Liu Changlei, Kwan Yeung, Hong Kong University, Hong Kong
- 7 **A Capture-based MAC Protocol and its Performance Analysis**
Kai Guo, University of Science and Technology, China

Thursday, October 9, 8.30 – 10.00 Salon 4 & 5

8P: Transport Layer Protocols Posters

- 1 **The TCP SACK-aware Snoop Protocol for Wireless Networks**
Sarma Vangala, Miguel Labrador, University of South Florida, USA

- 2 **M RTP: A Multi-flow Real-Time Transport Protocol for Ad Hoc Networks**
Shiwen Mao, Polytechnic University, USA; Dennis Bushmitch, Sathya Narayanan, Panasonic Technologies Inc, USA; Shivendra Panwar, Polytechnic University, USA
- 3 **Vertical and Horizontal Flow Controls for TCP Optimization in the Mobile Ad Hoc Networks**
Yongho Seok, Seoul National University, Korea
- 4 **A Simulation Study of TCP Performance over UMTS**
Balakrishna J. Prabhu, Eitan Altman, K. Avrachenkov, INRIA Sophia-Antipolis, France; Javier Dominguez, France Telecom, France
- 5 **Performance Analysis of dynamic TDM-Transport for GSM Voice and GPRS/EDGE Packet Data Services**
Carsten Ball, Kolio Ivanov, R. Müllner, F. Treml, Siemens AG, Germany
- 6 **Fast Scheduling Policies using WCDMA High Speed Downlink Packet Access**
Michele Zorzi, Diego Angelini, Michele Boaretto, University of Ferrara, Italy
- 7 **High Speed Downlink in UMTS: How to Improve Packet Loss Probability in Soft-Handover and at Higher Mobile Terminal Speeds**
Christoph Herrmann, Patrick Nickel, Philips Research Laboratories, Germany

Broadband Mobile Satellite Networks

Chair: Abbas Jamalipour, University of Sydney

Tuesday, October 7, 10.15 – 12.00 Salon 8

1F: Broadband Mobile Satellite Networks 1

Chair: TBA

- 1 **A Voice/Data Integration MAC Protocol for Ku Band CDMA VSAT Networks**
Wenhua Jiao, Lucent Technologies, China
- 2 **Ku-Band RF Transmitter of Phased Array Antenna System for Mobile Satellite-Internet Services**
Unghee Park, ETRI, Korea
- 3 **Simultaneous Reduction of Amplitude and Group-Delay Variation of Input Demultiplexer for Ku Band Satellite Transponder**
Juseop Lee, Man Seok Uhm, In-Bok Yom, Seong Pal Lee, ETRI, Korea; Chun Kwon Choi, Telwave Inc, Korea
- 4 **Hybrid ARQ Using Rate Compatible Block Turbo Codes for Mobile Satellite Systems**
Sunheui Ryoo, Sooyoung Kim, Sung Pal Lee, ETRI, Korea
- 5 **Ultra-portable Multimedia Satellite Terminals**
Harald Skinnemoen, Terje Vartdal Johan, Espen Eriksen, Nera SatCom, Norway
- 6 **Dedicated vs. Random Access to Signalling Channels in Satellite Communications Systems**
Pasquale Pace, Antonella Molinaro, Antonio Iera, Salvatore Marano, University of Calabria, Italy
- 7 **ATCR: An Adaptive Time-based Channel Reservation Mechanism for LEO Satellite Fixed Cell Systems**
Riadh Dhaou, G.E.T./I.N.T, France; Andre-Luc Beylot, ENSEEIHT, France; Monique Becker, G.E.T./I.N.T, France

Tuesday, October 8, 13.30 – 15.15 Salon 8

2F: Broadband Mobile Satellite Networks 2

Chair: TBA

- 1 **On Improving The Efficiency and Fairness of TCP over Broadband Satellite Networks**
Tarik Taleb, Nei Kato, Yoshiaki Nemoto, Tohoku University, Japan
- 2 **An Adaptive MAC Layer Protocol for ATM-based LEO Satellite Networks**
Marc Emmelmann, Fraunhofer FOKUS, Germany; Hermann Bischl, German Aerospace Agency (DLR), Germany
- 3 **A QoS-based Routing Algorithm in Multimedia Satellite Networks**
Chao Chen, Georgia Institute of Technology, USA
- 4 **Analysis of UDP Performance Enhancement Proxies for Mobile Users**
Eric Coe, Cauligi Raghavendra and James Stepanek, The Aerospace Corporation, USA
- 5 **Use of Mobile Mesh Networks for Inter-Vehicular Communication**
Paul Beckman, Sameer Verma, San Francisco State University, USA
- 6 **An Efficient DiffServ Switch for Satellite Communication Systems based on Cellular Neural Networks**
Romano Fantacci, Roberto Gubellini, Universita' di Firenze, Italy; Tommaso Pecorella, CNIT, Italy; Daniele Tarchi, Francesco Chiti, Universita' di Firenze, Italy

- 7 Enhancing TCP Throughput over Lossy Links Using ECN-capable RED Gateways**
Haowei Bai, Honeywell AES Technology Centers of Excellence, USA; M. Atiquzzaman, University of Oklahoma, USA

Wednesday, October 8, 8.30 – 10.00 Salon 4 & 5

4Q: Mobile Satellite Posters

- 1 Packet Scheduling in Interactive Satellite Return Channels for Mobile Multimedia Services**
Ki-Dong Lee, ETRI, Korea
- 2 Adaptive MC-CDMA for IP-based Broadband Mobile Satellite Systems**
Kwangjae Lim, Kunseok Kang, Sooyoung Kim, ETRI, Korea
- 3 Reduced-Complexity Digital Satellite CDMA Systems Robust to Doppler**
Mehmet Rasit Yuce, North Carolina State University, USA; Wentai Liu, University of California at Santa Cruz, USA

- 4 Design and Implementation of Multi-Frequency TDMA Modulator for Satellite Terminal based on DVB-RCS**
Hoon Jeong, Ryu JoonGyu, MinSu Shin, ETRI, Korea

- 5 Space-Time MMSE Reception for Multi-Satellite Environment**
Tommaso Palandri, Lorenzo Mucchi, Enrico Del Re, Romano Fantacci, University of Florence, Italy

- 6 A Bimodal Approach for GPS and IMU Integration for Land Vehicle Applications**
Seong-Baek Kim, Kyong-Ho Choi, Seung-Yong Lee, Ji-Hoon Choi, Byung-Tae Jang, ETRI, Korea

- 7 Design & Implementation of Fast Frequency Hopping Tx IF Module for Satellite Terminal based on DVB-RCS**
Ryu Joon-Gyu, Min-Su Shin, Hoon Jeong, Ho-Jin Lee, ETRI, Korea

Data Base Management in Wireless Network Environments

Chairs: Yang Xiao, University of Memphis; Jie Li, University of Tsukuba; Yi Pan, Georgia State University

Tuesday, October 7, 15.35 - 17.05 Salon 8

Session 3F

Chair: TBA

- 1 A Special-Purpose Peer-to-Peer File Sharing System for Mobile Ad Hoc Networks**
Alexander Klemm, Christoph Lindemann, Oliver P. Waldhorst, University of Dortmund, Germany
- 2 A New Efficient Mobility Management Scheme for Wireless Cellular Networks**
Wenchao Ma, Yuguang Fang, University of Florida, USA

- 3 An Intra-Location Area Location Update Scheme for PCS Networks**
Yang Xiao, University of Memphis, USA

- 4 An Enhanced Approach to Determine A Small Forward Node Set Based on Multipoint Relay**
Jie Wu, Florida Atlantic University, USA

- 5 Adapting Transactions in a System on Mobile Devices, SyD**
Wanxia Xie, Sham Navathe, Georgia Institute of Technology, USA

- 6 Querying Moving Objects with Uncertainty**
Bin Lin, Hoda Mokhtar, Jianwen Su, UCSB, USA

Wireless Ad hoc and Sensor Networks

Chair: Ahmed Safwat, Queen's University

Wednesday, October 8, 8.30 – 10.00 Salon 8

4F: Wireless Ad hoc and Sensor Networks 1

Chair: TBA

- 1 MAC for ad-hoc inter-vehicle network: services and performance**
Flaminio Borgonovo, Politecnico di Milano, Italy, Luca Campelli, Siemens Mobile Communications, Italy, Antonio Capone, Politecnico di Milano, Italy, Luca Coletti, Siemens Mobile Communications, Italy
- 2 An Adaptive MAC Protocol for Wireless Ad Hoc Networks using Smart Antenna System**
Wen-Tsuen Chen, Meng-Shiuan Pan, National Tsing Hua University, China, Juin-Jia Dai, ITRI, China
- 3 Interference Aware, IA MAC: an Enhancement to IEEE802.11b DCF**
Matteo Cesana, Politecnico di Milano, Italy, Daniela Maniezzo, UCLA, USA; Pierpaolo Bergamo, Università di Ferrara, Italy, Mario Gerla, UCLA, USA
- 4 DOA-ALOHA: Slotted ALOHA for Ad Hoc Networking Using Smart Antennas**
Harkirat Singh, Suresh Singh, Portland State University, USA

- 5 Enhanced Backoff Scheme in CSMA/CA for IEEE 802.11**

Wen-Kuang Kuo, C.C. Jay Kuo, University of Southern California, USA

- 6 Hierarchical Access Structure with Controlling Maximum Transmission Power Level in Wireless Ad Hoc Network**
Ae-ri Lim, Prof Dong-Ho Cho, KAIST, Korea

Wednesday, October 8, 10.30 – 12.15 Salon 8

5F: Wireless Ad hoc and Sensor Networks 2

Chair: TBA

- 1 Link Longevity Kalman-Estimator for Ad Hoc Networks**
Rui Huang, Gergely Zaruba, Manfred Huber, University of Texas at Arlington, USA
- 2 Self-Learning Ad Hoc Routing Protocol**
Patricia Best, Siddhartha Gundeti, Ravi Pendse, Wichita State University, USA
- 3 Self-nominating: a Robust Affordable Routing in Wireless Sensor Networks**
Yuecheng Zhang, Liang Cheng, Lehigh University, USA

4 Proposal and Demonstration of Link Connectivity Assessment based Enhancements to Routing in Mobile Ad-hoc Networks

Jatinder Pal Singh, Nicholas Bambos, Stanford University, USA; Bhaskar Srinivasan and Detlef Clawin, Robert Bosch Corp., USA

5 Composable Geographical Routing in Sensor Networks

Hong Huang, New Mexico State University, USA

6 Analysis of Energy-Efficient, Fair Routing in Wireless Sensor Networks through Non-linear Optimization

Bhaskar Krishnamachari, Fernando Ordonez, University of Southern California, USA

7 A Novel DSR-based Energy-efficient Routing Algorithm for Mobile Ad-hoc Networks

Jose-Esteban Garcia, Anis Kallel, Kyandoghere Kyamakya, Klaus Jobmann, University of Hannover, Germany, Juan Carlos Cano Escriba, Pietro Manzoni, Universidad Politecnica de Valencia, Spain

Wednesday, October 8, 13.45 – 15.30 Salon 8

6F: Wireless Ad hoc and Sensor Networks 3

Chair: TBA

1 Optimal Single-session Flow Routing for Wireless Sensor Networks

Thomas Hou, Yi Shi, Virginia Tech, USA; Jianping Pan, University of Waterloo, Canada, Scott Midkiff, Virginia Tech, USA

2 Dynamic Probabilistic Broadcasting in Mobile Ad Hoc Networks

Qi Zhang, Dharma Agrawal, University of Cincinnati, USA

3 E-limited scheduling in Bluetooth piconets: performance and admission control

Jelena Mistic, Hong Kong University of Science & Technology, China; Vojislav Mistic, University of Manitoba, Canada; Ka Lok Chan, Hong Kong University of Science & Technology, China

4 Analyzing the Throughput of the IEEE 802.11 DCF Scheme with Hidden Nodes

Ting-Chao Hou, Ling-Fan Tsao, Liu Hsin Chiao, National Chung Cheng University, China

5 Analyzing the Use of E-textiles to Improve Application Performance

Thomas L. Martin, Mark Jones, Virginia Tech, USA

6 On the Transport Capacity of the Many-to-One Dense Wireless Network

Hesham El Gamal, Ohio-State University, USA

7 Capacity Analysis of a Multi-hop Infrastructure for Coverage of Urban Scenarios

Tim Irnich, Daniel C. Schultz, Ralf Pabst, Aachen University, Germany

Wednesday, October 8, 16.00 – 17.45 Salon 8

7F: Wireless Ad hoc and Sensor Networks 4

Chair: TBA

1 Advancement optimization in multihop wireless networks

Michele Zorzi, Andrea Armaroli, Università degli Studi di Ferrara, Italy

2 Wireless LAN Performance in Overlapping Cells

Klaus Heck, University of Wuerzburg, Germany

3 Performance Evaluation of Stored Geocast

Christian Maihöfer, Christian Cseh, Walter Franz, DaimlerChrysler, Germany

4 A Transmission Range Reduction Scheme for Power-Aware Broadcasting in Ad hoc Networks

Jie Wu, Bing Wu, Florida Atlantic University, USA

5 Transmit Power Efficiency of a Multi-hop Virtual Cellular System

Eisuke Kudoh, Fumiyuki Adachi, Tohoku University, Japan

6 Joint Scheduling and Power Control for Multicasting in Wireless Ad Hoc Networks

Kang Wang, University of California at San Diego, USA; Carla-Fabiana Chiasserini, Politecnico di Torino, Italy; John Proakis, Northeastern University, USA; Ramesh Rao, University of California at San Diego, USA

7 A traffic-adaptable algorithm for increased Energy-efficiency and Scalability in Wireless Sensor Networks

Srajan Raghuwanshi, Amitabh Mishra, Virginia Tech, USA

Thursday, October 9, 8.30 – 10.00 Salon 8

8F: Wireless Ad hoc and Sensor Networks 5

Chair: TBA

1 A Novel Power-Efficient Broadcast Routing Algorithm Exploiting Broadcast Efficiency with Omnidirectional and Directional Antenna

Intae Kang, Radha Poovendran, University of Washington, USA

2 A-Cell: A Novel Multi-hop Cellular Architecture for Ad hoc and 4G Wireless Networks

Ahmed Safwat, Queen's University, Canada

3 Fairness and QoS in Multihop Wireless Networks

Jangeun Jun, Mihail L. Sichitiu, North Carolina State University, USA

4 Video Communications for Unstructured Mobile Networks

Hamid Gharavi, NIST, USA

5 Distributed Positioning in Ad-hoc Networks: A Cramer-Rao Bound Analysis

Erik Larsson, University of Florida, USA

6 E-STROBE: An Adaptive Beacon Activation Algorithm for Sensor Location

Ankur Tarnacha, Penn State, USA; Tom LaPorta, Bell Labs, USA

Thursday, October 9, 10.30 – 12.15 Salon 8

9F: Wireless Ad hoc and Sensor Networks 6

Chair: TBA

1 Base-Station Repositioning For Optimized Performance of Sensor Networks

Mohamed Younis, Meenakshi Bangad, University of Maryland Baltimore County, USA

2 An Ad Hoc Multipath Video Transport Testbed

Shiwen Mao, Shunan Lin, Shivendra Panwar, Yao Wang, Polytechnic University, USA

3 Spatio-Temporal Sampling Rates for Wireless Sensor Networks

Seema Bandyopadhyay, Qingjiang Tian, Edward Coyle, Purdue University, USA

- 4 Ad-Hoc Nodes and Internet Connectivity using Pseudo-wire Interfaces**
Nagaraja Thanthy, Ravi Pendse, Kamesh Namuduri, Wichita State University, USA
- 5 Runtime Security Composition for Sensor Networks, SecureSense**
Qi Xue, Aura Ganz, University of Massachusetts, USA
- 6 Energy-Efficient Security Protocol for Wireless Sensor Networks**
Hasan Cam, Suat Ozdemir, Devasenapathy Muthuavinashiappan, Prashant Nair, Arizona State University, USA
- 7 Reservation Conflicts in a Novel Air Interface for Ad Hoc Networks based on UTRA TDD**
Michael Meincke, University of Hanover, Germany, Matthias Lott, Siemens, Germany, Klaus Jobmann, University of Hanover, Germany

Thursday, October 9, 13.45 – 15.30 Salon 4 & 5

10Q: Wireless Ad hoc and Sensor Networks Posters

- 1 Intelligent ambient ad hoc networking to support real-time services**
Gwendal Le Grand, Rabah Meraihi, Samir Tohmé, Michel Riguidel, ENST, France
- 2 PATCH: A Novel Local Recovery Mechanism for Mobile Ad-hoc Networks**
Genping Liu, Kai Juan Wong, Bu Sung Lee, Boon Chong Seet, Chuan Heng Foh, Lijuan Zhu, Nanyang Technological University, Singapore
- 3 Locating Base Stations for Video Sensor Networks**
Jianping Pan, University of Waterloo, Canada; Thomas Hou, Virginia Tech, USA; Lin Cai, University of Waterloo, Canada; Yi Shi, Virginia Tech, USA; Sherman Shen, University of Waterloo, Canada

- 4 Design and Implementation of a Sensor Network Node for Ubiquitous Computing Environment**
Yoshihiro Kawahara, Masateru Minami, Hiroyuki Morikawa, T. Aoyama, University of Tokyo, Japan
- 5 A Distributed Approach to Security in Sensornets**
Vijay Bhuse, Ajay Gupta, Rishi Pidva, Western Michigan University, USA
- 6 Power Assignment for Throughput Enhancement, PATE: A Distributed Topology Control Algorithm to Improve Throughput in Mobile Ad-hoc Networks**
Yongqiang Xiong, Qian Zhang, Microsoft Research Asia, China; Feng Wang, University of Texas at Austin, USA; Wenwu Zhu, Microsoft Research Asia, China
- 7 An Enhancement of the IEEE 802.11 MAC for Multihop Ad Hoc Networks**
Apichet Chayabejara, Salahuddin Muhammad Salim Zabir, Norio Shiratori, Tohoku University, Japan
- 8 Impact of Mobility on the Performance of Ad Hoc Wireless Networks**
Megh Bhatt, Ronak Chokshi, Sooksan Panichpapiboon, Nawaporn Wisitpongphan, Ozan Tonguz, Carnegie Mellon University, USA
- 9 Learning from Class-Imbalanced Data in Wireless Sensor Networks**
Predrag Radivojac, Temple University, USA; Krishna M. Sivalingam, University of Maryland, Baltimore County, USA; Zoran Obradovic, Temple University, USA
- 10 Tracking Moving Targets in a Smart Sensor Network**
Rahul Gupta, University of Cincinnati, USA; Samir Das, SUNY at Stony Brook, USA
- 11 Collinearity for Sensor Network Localization**
Cristian Poggi, Gianluca Mazzini, University of Ferrara, Italy
- 12 Indoor Mobility Model**
Michael Angermann, Jens Kammann, German Aerospace Center, Germany

Scalable Autonomous Networking for Self-Configuring and QoS-based Ad Hoc Wireless Networks

Chair: Izhak Rubin, UCLA

Thursday, October 9, 13.45 – 15.30 Salon 8

Session 10F

Chair: Izhak Rubin, UCLA

- 1 On Misconceptions of the Radio Network Behaviour of Ad-hoc Systems Like Bluetooth**
Kirsten Matheus, Stefan Zurbes, Rakesh Taori, Ericsson Eurolab, Netherlands; Sverker Magnusson, Ericsson Radio Systems AB, Sweden
- 2 Routing and Scheduling in Multi-hop Wireless Networks**
Anuj Puri, Pravin Varaiya, University of California at Berkeley, USA
- 3 Delay-Throughput Performance of Load-Adaptive Power-Controlled Multihop Wireless Networks with Scheduled Transmissions**
Izhak Rubin, Rima M. Khalaf, University of California at Los Angeles, USA; Allen Moshfegh, Office of Naval Research, USA

- 4 Throughput Enhancement by Multi-hop Relaying in Cellular Radio Networks with Non-uniform Traffic Distribution**
Jaeweon Cho, Zygmunt J. Haas, Cornell University, USA
- 5 Adaptive Routing in Ubiquitous Mobile Access**
Qi Xue, Aura Ganz, University of Massachusetts at Amherst, USA
- 6 Multi-Tier Mobile Ad Hoc Routing**
Bo Ryu, Tim Andersen, Tamer ElBatt, HRL Laboratories, USA
- 7 A QoS Oriented Topological Synthesis Protocol for Mobile Backbone Networks**
Izhak Rubin, Xiaolong Huang, Y. C. Liu, University of California Los Angeles, USA

Thursday, October 9, 8.30 – 10.00 Salon 4 & 5

9Q: UWB and Ad Hoc Wireless Networks Poster Session

1 Link Stability Models for QoS Ad Hoc Routing Algorithms

Izhak Rubin, Yichen Liu, University of California at Los Angeles, USA

2 QoS in Ad Hoc Networks

Ameesh N. Pandya, Greg Pottie, University of California at Los Angeles, USA

3 A-DSR: A Based-DSR Anycast Protocol for IPv6 Flow in Mobile Ad Hoc Networks

Jianxin Wang, Yuan Zheng, Central South University, China, Weijia Jia, City University of Hong Kong, Hong Kong

4 Modelling and Performance Analysis of a Novel Position-based Reliable Unicast and Multicast Routing Method Using Coloured Petri Nets

Fazli Erbas, Kyandoghere Kyamakya, Klaus Jobmann, University of Hanover, Germany

5 A power-efficient routing metric for UWB wireless mobile networks

Luca De Nardis, Guerino Giancola, Maria-Gabriella Di Benedetto, University of Rome La Sapienza, Italy

6 A Parametric Study of Time-Domain Characteristics of Possible UWB Antenna Architectures

Joseph Noronha, Stanislav Licul, Christopher Anderson, Timothy Bielawa, William Davis, Dennis Sweeney, Virginia Polytechnic Institute and State University, USA

Recent Results

Chair: Vahid Tarokh, Harvard University

Tuesday, October 7, 10.15 – 12.00 Crystal Room

1G: Recent Results 1

Chair: Fred Daneshgaran, California State University, USA

1 UWB Indoor Path Loss Model For Residential and Commercial Environments

Saeed S. Ghassemzadeh, AT&T Labs, USA; Larry Greenstein, Rutgers University, USA; Aleksandar Kavcic, Thorvardur Sveinsson, Vahid Tarokh, Harvard University, USA

2 UWB Indoor Delay Profile Model For Residential and Commercial Environments

Saeed S. Ghassemzadeh, AT&T Labs, USA; Larry Greenstein, Rutgers University, USA; Aleksandar Kavcic, Thorvardur Sveinsson, Vahid Tarokh, Harvard University, USA

3 System Capacity Gains from UMTS Smart Antenna Concepts

Mirko Schacht, Lucent Technologies, University of Duisburg, Germany

4 On the Second Order Statistics of SIR in Wireless Nakagami Channels

Fernando L. Ramos Alarcón, M. Mauricio Lara, Valeri Kontorovitch, CINVESTAV-IPN, Mexico

5 Complementary Beam-forming

Vahid Tarokh, Harvard University, USA; Yang-Seok Choi, Siavash M. Alamouti, Vivato, Inc, USA

6 Beam Diversity for Indoor WLAN Systems

Eduardo Casas, Tong Chia, Marcus DaSilva, Hujun Yin, Vivato R&D, USA

Tuesday, October 8, 13.30 – 15.15 Boca Coco

2G: Recent Results 2

Chair: Marina Mondin, Politecnico Turino, Italy

1 Pre- Post- and Balanced Equalization in OFDM

Peter Stavroulakis, Technical University of Crete, Greece; Grigorios Charalabopoulos, Hamid Aghvami, Kings College, UK

2 Asymptotic Gains of Generalized Selection Combining

Yao Ma, Zhengdao Wang, Iowa State University, USA; Subbarayan Pasupathy, University of Toronto, USA

3 Adaptive Antennas at the Mobile Handset for Reduced Radiation Hazards: An Analysis

Rajesh Khanna, Thapar Institute of Eng & Tech, India, Rajiv Saxena, MITS, Gwalior, India

4 Optimization of Waveforms for UWB Disk Antenna Arrays

Yongfu Huang, Guangguo Bi, Xiangning Fan, Jiang Wang, Southeast University, China

5 Level Crossing Rate and Average Fade Duration in MIMO Mobile Fading Channels

Ali Abdi, Chunjun Gao, Alexander Haimovich, New Jersey Institute of Technology, USA

Tuesday, October 7, 15.35 – 17.05 Boca Coco

3G: Recent Results 3

Chair: Saeed Ghassemzadeh, AT&T Labs-Research, USA

1 Mac Layer Issues and Challenges of Using Smart Antennas with 802.11

Bobby Jose, Hujun Yin, Praveen Mehrotra, Ed Casas, Vivato R&D, USA

2 Pulse Waveform Optimization for UWB signal with PPM on Gaussian channels

Burak Berksoy, Lei Wei, University of Central Florida, USA

3 A New Short Memory Turbo Code with Good BER Performance and Low Decoding Complexity

Yu Liao, University of Minnesota, USA

4 Variable Block-Size Double Predictor DPCM (VBDDP-DPCM) Image Transmission System over Wireless Fading Channel

Jiachyi Wu, National Taiwan Ocean University, Taiwan; Neil H.-C. Chung, MTI Corp, Taiwan

5 Local Maximum Likelihood Multiuser Detection with Interference of Unknown Signal Waveforms

Xiong Wu, City University of New York, USA

Vehicle Power and Propulsion

Chair: Mark Ehsani, Texas A&M University

Wednesday, October 8, 8.30 – 10.00 Crystal Room

4G: Vehicle Power & Propulsion 1

Chair: Babak Fahimi

- 1 Design of a new axial flux permanent magnet generator for hybrid electric vehicles**
Eefje Peeters, Paul Van Tichelen, Vito, Belgium
- 2 Design of a 5-Phase Permanent Magnet Brushless DC Motor for Automobiles**
Liuchen Chang, University of New Brunswick, Canada; Jerzy Muszynski, Dana Corporation, USA
- 3 A High Power High Temperature Mechatronic Actuator for the Electromagnetical Valve Drive**
Joachim Melbert, Roger Uhlenbrock, Ruhr-Universitaet Bochum
- 4 Design of a 50kW Switched Reluctance Machine for HEV propulsion systems**
Zhan Qionghua, Wang Shuanghong, Ma zhiyuan, Guo Wei, Huazhong University, China
- 5 Optimization of an Automotive Generator Using Evolutionary Programming**
Andreas Koenig, Joshua Williams, Steven Pekarek, University of Missouri-Rolla, USA
- 6 Adjustable Speed Drives Transportation Industry Needs Part I: Automotive**
John M. Miller, Steven Schultz, Brendan Conlon, Mark Duvall, M. David Kankam, Nick Nagel, J-N-J Miller Des. Svcs, USA

5G: Vehicle Power & Propulsion 2

Chair: Sture Eriksson

- 1 Coolant Pump Drive: An Application for a Switched Reluctance Machine**
Chris Edrington, Babak Fahimi, University of Missouri, USA
- 2 A 2MW Flywheel for Hybrid Locomotive Power**
Robert Thelen, John Herbst, Matthew Caprio, University of Texas, USA
- 3 The Role of Ultracapacitors in an Energy Storage Unit for Vehicle Power Management**
Roberto Schupbach, University of Arkansas, USA
- 4 Hybrid Electric Drive, HED Vulnerability Analysis**
Beth Ward, U.S. Army Research Laboratory, USA
- 5 Control Strategies for Hybrid Vehicles: Synthesis & Evaluation**
Sebastien Delprat, Thierry Marie Guerra, University of Valenciennes, France
- 6 On-Board Diagnostic and Rejuvenation System for Electric Vehicles**
Chakib Alaoui, Ziyad M. Salameh, University of Massachusetts, USA

Wednesday, October 8, 13.45 – 15.30 Crystal Room

6G: Vehicle Power & Propulsion 3: Automotive Modeling and Design

Chair: Ali Emadi

- 1 Lumped Parameter Modeling as a Predictive Tool for a Battery Status Monitor**
Jon Christophersen, Chester Motloch, Chinh Ho, Idaho National Engineering and Environmental Laboratory, USA; John Morrison, Ronald Fenton, Montana Tech, USA; Vincent Battaglia, Argonne National Laboratory, USA
- 2 Complete Automotive Electrical System Design**
Ralf Juchem, Birgit Knorr, ANSOFT Corporation, USA

3 A Middleware for Signal-Flow Digital Simulation Models in Electrical Vehicle Powertrain

Cai Yunpeng, Sun Xiaomin, Jia Peifa, Tsinghua University, China

4 Multi-Input All-Electric Vehicle Design Using a Forward Simulation Software Approach

Andy Richardson, John Economou, P.C.K. Luk, Cranfield University, UK

5 Comparison of Load Availability and Reliability in Multiplexed and Non-Multiplexed Wiring Harness System Based Electric Vehicle

M. Abul Masrur, Vijay K. Garg, John Shen, Paul Richardson, US Army TACOM, USA

6 Dynamic Pem Fuel Cell Modeling For Automotive Applications

James Garnier, Université Belfort Montbéliard, France; Marie Cecile Pera, Université Franche Comté, France; Daniel Hissel, Université Belfort Montbéliard, France; Jean-marie Kauffmann, Université de Franche Comté, France; Gérard Coquery, Alexandre De Bernardinis, INRETS, France

Wednesday, October 8, 16.00 – 17.45 Salon 4 & 5

7P: Vehicular Technology Posters

- 1 Improved Motion Control and Energy Consumption for Sensorless Electromagnetical Actuators**
Christian Günselmann, Joachim Melbert, University of Bochum, Germany
- 2 Hybrid Modelling of an All-Electric Front-Wheel Ackerman Steered Vehicle**
John Economou, P.C.K. Luk, Antonios Tsourdos, Brian White, Cranfield University, UK
- 3 Transient Thermal Computation of a PEM Fuel Cell by a Nodes Modeling**
Laurent Dumercy, Université Belfort-Montbéliard, France; Reynal Glises, Université de Franche-Comté; Hasna Louahli-Gualous, Université Belfort-Montbéliard, France; Jean-marie Kauffmann, Université de Franche Comté
- 4 Adjustable Speed Drives Transportation Industry Needs Part II: R&D and Aeropropulsion**
John M. Miller, Steven Schultz, Brendan Conlon, Mark Duvall, M. David Kankam, Nick Nagel, J-N-J Miller Des. Svcs, USA
- 5 Performance and Fuel Economy Comparative Analysis of Conventional, Hybrid, and Fuel Cell Heavy-Duty Transit Buses**
Valli Dawood, Ali Emadi, Illinois Institute of Technology, USA
- 6 Switched reluctance motors: small motors of the next generation for automobiles?**
Liuchen Chang, University of New Brunswick, Canada
- 7 Flywheel Electric Motor/Generator Characterization for Hybrid Vehicles**
Yimin Gao, Mark Ehsani, Texas A&M University, USA; Robert Thelen, University of Texas, USA
- 8 Experiments in Fast Charging Lead Acid Electric Vehicle Batteries**
Chakib Alaoui, Ziyad M. Salameh, University of Massachusetts, USA
- 9 A New Train Real-time Dispatching System**
Yun Liu, Northern Jiaotong University, China
- 10 Architecture for Wireless Access in Vehicles**
Alex Yiu-Man Chan, Wen-Pai Lu, Cisco Systems, USA

11A New Technology for a Cruise Control System
Perry MacNeille, Ronald Miller, Ford Motor Company, USA

12LED Road Illumination Communications System
Shogo Kitano, Toshihiko Komine, Shinichiro Haruyama, Masao Nakagawa, Keio University

13Internet based Personalized Services for Public Transportation
Tatsuo Itabashi, Sony, Japan

Vehicular Electronic Systems – Communications and Control

Chairs: M. Shahgir Ahmed, DaimlerChrysler and Abul Masrur, TACOM

Thursday, October 9, 10.30 – 12.15 Crystal Room

Session 9G

Chair: TBD

- 1 Ranging and Communication Systems between High Speed Trains in Tunnels**
Martine Lienard, Pierre Laly, Pierre Degauque, University of Lille, France
- 2 A CDM Transmission Scheme with Cancellation Technique for Accumulated Cross-Correlation Values**
Kazuyuki Shimezawa, Chuo University, Japan; Hiroshi Harada, Communications Research Laboratory, Japan; Hiroshi Shirai, Chuo University, Japan
- 3 Information Server for Bus Operators**
Jussi Sinkkonen, Tuomas Suontausta, Pekko Tiitto, Marko Hännikäinen, Tampere University of Technology, Finland; Ilkka Kaisto, Insta Visual Solutions Oy, Finland; Timo Hämäläinen, Tampere University of Technology, Finland

4 On Traffic Dynamical Aspects of Inter Vehicle Communications, IVC
Michael Rudack, Michael Meincke, University of Hanover, Germany; Matthias Lott, Siemens AG, Germany; Klaus Jobmann, University of Hanover, Germany

5 Hardware Implementation Choices for Vehicular Telematics Systems and Simulation Results
Vikas Kukshya, H.P. Hsu, HRL Laboratories, USA; Timothy Talty, General Motors, USA

6 Automotive Engine Misfire Detection Using Kalman Filtering
Anson Lee, DaimlerChrysler; Robert N.K. Loh, Oakland University, USA; James Z. Wu, DaimlerChrysler

7 Evolution of Local Interconnect Network, LIN Solutions
Matt Ruff, Motorola Inc., USA

Multimedia Services in Wireless Networks

Chairs: Verma Sanjeev and Srinivas Bindignavile, Nokia

Wednesday, October 8, 16.00 – 17.45 Crystal Room

7G: Multimedia Services in Wireless Networks

Chair: Jungwoo Lee, Seoul National University, Korea

- 1 SMART: A Synchronization Scheme for Providing Multimedia Quality in Emerging Wireless Internet**
Hua Zhu, Guoping Zeng, Imrich Chlamtac, University of Texas at Dallas, USA
- 2 Robust H.26L video Coding and Transmission over Bursty Packet Loss Wireless Networks**
Qi Qu, Yong Pei, James Modestino, University of Miami, USA
- 3 A Real-time Mobile Multimedia Communication System for the Prevention and Alert of Debris-Flow Disaster**
Hsu Yang Kung, Hao-Hsiang Ku, National Pingtung University of Science and Technology, China
- 4 Multi-priority Video Partitioning for CDMA based Communication Systems**
Kirubashankar Ramakrishnan, K Namuduri, S K Jayaweera, Wichita State University, USA
- 5 Link Layer and Network Layer Approach to Support Mobile Commerce Transactions**
Punit Ahluwalia, Upkar Varshney, Georgia State University, USA

6 A Joint Source Coding-Power Control Approach Combined with Adaptive Channel Coding for Video Transmission Over CDMA Cellular Networks
Yee Sin Chan, University of California San Diego, USA; James Modestino, University of Miami, USA

7 Link Quality-Aware Cut-Off Prioritisation Strategy for GSM/GPRS Networks with Link Adaptation
José Vázquez-Ávila, Felipe A. Cruz-Pérez, CINVESTAV-IPN, Mexico, Lauro Ortigoza-Guerrero, WFI, USA

Thursday, October 9, 8.30 – 10.00 Crystal Room

8G: Multimedia Services in Wireless Networks 2

Chair: Jungwoo Lee, Seoul National University, Korea

- 1 Improving SigComp performance through Extended Operations**
Jan Christoffersson, Hans Hannu, Mats Nordberg, Lajos Zaccomer, Ericsson Hungary Ltd, Hungary
- 2 P3-DCF: Service Differentiation in IEEE 802.11 WLANs using Per-Packet Priorities**
Yacine Ghamri Doudane, University of Paris VI, France, Rola Naja, Ecole Nationale Supérieure des Télécommunications, France, Guy Pujolle, University of Paris VI, France, Samir Tohmé, Ecole Nationale Supérieure des Télécommunications, France
- 3 Redundant Transmission using Internet Protocol Version 6**
Gabriele Piero Nizzoli, Gianluca Mazzini, Univeristy of Ferrara, Italy

4 The Autoconfiguration of Recursive DNS Server and the Optimization of DNS Name Resolution in Hierarchical Mobile IPv6

Jaehoon Jeong, Kyeongjin Lee, Jungsoo Park, Heecheol Lee, Hyoungjun Kim, ETRI, Korea

5 A Bluetooth enabled HiperLAN/2 receiver

Roel Schiphorst, Fokke Hoeksema, Kees Slump, University of Twente, The Netherlands

6 Topology Issues in IEEE802.15.3 Systems: Evaluation of Piconet Establishment Strategies

Daniel Trezentos, Mitsubishi Electric ITE TCL, France

Wireless QoS

Chair: Aftab Ahmad, DePaul University

Thursday, October 9, 13.45 – 15.30 Crystal Room

10G: Wireless QoS 1

Chair: Aftab Ahmad, DePaul University, USA

1 A Virtual Time Simulator for Studying QoS Management Functions in UTRAN

David G. Soldani, Jaana Laiho, Nokia, Finland

2 A Simple Model for Forward Link Power-Based Blocking in CDMA Systems

Jaber A. Khoja, University of Texas at Arlington, USA; Mazin Al-Shalash, Nortel Networks, USA; Jonathan Breadow, University of Texas at Arlington, USA

3 Quality of Service Framework in MANETs Using Differentiated Services

Venus Sin Yam To, Brahim Bensaou, Hong Kong University of Science and Technology, Hong Kong

4 Throughput of Wireless Data Communications

David J. Goodman, Zory Marantz, Penina Orenstein, Virgilio Rodriguez, Polytechnic University, USA

5 An Enhanced Radio Resource Management with Service and User Differentiation for UMTS Networks

David G. Soldani, Jaana Laiho, Nokia, Finland

6 QoS Multi-scale Filtering in Integrated IP Wired/Wireless Networks

Flavio De Angelis, Ibrahim Habib, The City College of New York, USA

Wednesday, October 9, 16.00 – 17.45 Crystal Room

11G: Wireless QoS 2

Chair: Aftab Ahmad, DePaul University, USA

1 Erlang Capacity of a CDMA Cellular System with Multirate Sources

Hossam Fattah, Cyril Leung, University of British Columbia, Canada

2 Throughput Analysis of the Enhanced Distributed Coordination Function in IEEE 802.11e

Yu-Liang Kuo, Chi-Hung Lu, Hsiao-Kuang Wu, Chen Gen-Huey, National Taiwan University, China

3 A Novel Packet Scheduling in an Enhanced Joint CDMA/NC-PRMA Protocol for Wireless Multimedia Communications

Suwon Lee, KJIST, Korea; Aftab Ahmad, DePaul, USA

4 A Hierarchical Resource Management Approach for QoS provisioning in IP-based Wireless and Mobile Networks

Kelvin Lopes Dias, Djamel Sadok, Judith Kelner, Federal University of Pernambuco, Brazil

5 Admission Control Framework to Provide Guaranteed Delay in Error-prone Wireless Channel

Prasanna Chaporkar, Saswati Sarkar, University of Pennsylvania, USA

6 Call Admission Control Using Dynamic Cell Virtual Traffic in CDMA Systems

Mostafa M. El-Said, University of Louisville, USA

7 MPLS-Mux: An Efficient Protocol for Providing QoS in IP Based Wireless Networks

Mooi Choo Chuah, Kamesh Medepalli, Sandesh Jajoo, Seyong Park, Lucent Technologies, USA

Wednesday, October 8, 8.30 – 10.00 Salon 4 & 5

4P: Wireless QoS Posters

1 Analysis Methodology of Adaptive Resource Allocation Schemes for Handoff Calls

Donghwan Lee, Won-Ick Lee, Saewoong Bahk, Seoul National University, Korea

2 Handover supporting QoS in MPLS-based Hierarchical Mobile IPv6 networks

QunYing Xie, National University of Singapore, Singapore; Hoang M. Nguyen, Paul Tan, Winston Seah, Insitute for Infocomm Research, Singapore

3 Quality-of-Service Signaling in Wireless IP-based Mobile Networks

Roland Bless, University of Karlsruhe, Germany; Joachim Hillebrand, Christian Prehofer, DoCoMo Labs Europe, Europe; Martina Zitterbart, University of Karlsruhe, Germany

4 Impact of Channel Modeling on the Performance of Wireless Scheduling Schemes

Aytac Azgin, Marwan Krunz, University of Arizona, USA

5 A New Access Method Supporting QoS in IEEE 802.11 networks

Q.D. Van, Anne Wei, University of Paris XII, France; Selma Boumerdassi, Conservatoire National des Arts et des Métiers, France; Dominique De Geest, Benoit Geller, University of Paris XII, France

6 A Framework for Local QoS Prediction in Mobile Wireless Networks

Hongxia Sun, Herman D. Hughes, Michigan State University, USA

7 Power Optimization of Wireless Systems Utilizing Space-Time Block Codes and Successively Refinable Source Coding

Hamid Jafarkhani, Homayoun Yousefi'zadeh, Mehran Moshfegi, University of California at Irvine, USA

07:00-08:00	Author's Breakfast (Pavilion)								
08:30-09:50	Plenary Session (International Ballroom)								
09:50-10:15	Refreshment Break (Salon 4 & 5)								
Room	Salon 1	Salon 2	Salon 3	Salon 6	Salon 7	Salon 8	Crystal Room	Salon 4 & 5	Salon 4 & 5
	<i>Session 1A</i>	<i>Session 1B</i>	<i>Session 1C</i>	<i>Session 1D</i>	<i>Session 1E</i>	<i>Session 1F</i>	<i>Session 1G</i>	<i>Poster 1P</i>	<i>Poster 1Q</i>
10:15-12:00	<i>Interference Cancellation for Wireless Mobile Radio Systems 1</i>	<i>Emerging Multiple Access Technologies 1</i>	<i>Channel Coding 1</i>	<i>Next Generation Wireless Systems</i>	<i>Wireless Security 1</i>	<i>Broadband Satellite Networks 1</i>	<i>Recent Results 1</i>	<i>Antennas & Propagation 1</i>	<i>CDMA</i>
12:00-13:30	Lunch (Pavilion)								
	<i>Session 2A</i>	<i>Session 2B</i>	<i>Session 2C</i>	<i>Session 2D</i>	<i>Session 2E</i>	<i>Session 2F</i>	<i>Session 2G</i>	<i>Poster 2P</i>	<i>Poster 2Q</i>
13:30-15:15	<i>Interference Cancellation for Wireless Mobile Radio Systems 2</i>	<i>Emerging Multiple Access Technologies 2</i>	<i>Channel Coding 2</i>	<i>High Speed Wireless Networks (100 Mb/s & beyond)</i>	<i>Wireless Security 2</i>	<i>Broadband Satellite Networks 2</i>	<i>Recent Results 2</i>	<i>Antennas & Propagation 1 Mobile Location</i>	<i>MIMO</i>
15:15-15:35	Refreshment Break (Salon 4 & 5)								
	<i>Session 3A</i>	<i>Session 3B</i>	<i>Session 3C</i>	<i>Session 3D</i>	<i>Session 3E</i>	<i>Session 3F</i>	<i>Session 3G</i>	<i>Poster 3P</i>	<i>Poster 3Q</i>
15:35-17:05	<i>Modulation/ Demodulation</i>	<i>Link Level QoS Techniques</i>	<i>MIMO 1</i>	<i>Location and Location Management</i>	<i>Integrated Heterogeneous Wireless Networks</i>	<i>Data base Management in Wireless Netwk Environments</i>	<i>Recent Results 3</i>	<i>Emerging Multiple Access Technologies</i>	<i>Interference Cancellation for Wireless Mobile Radio Systems</i>
17:30-19:00	Reception (Poolside)								
19:00-21:00	Technical Panel: "Evolution of 3G standards (HSDPA and 1XEV-DV) and their enabling technologies" (International Ballroom South)								
07:00-08:00	Author's Breakfast (Pavilion)								
Room	Salon 1	Salon 2	Salon 3	Salon 6	Salon 7	Salon 8	Crystal Room	Salon 4 & 5	Salon 4 & 5
	<i>Session 4A</i>	<i>Session 4B</i>	<i>Session 4C</i>	<i>Session 4D</i>	<i>Session 4E</i>	<i>Session 4F</i>	<i>Session 4G</i>	<i>Poster 4P</i>	<i>Poster 4Q</i>
08:30-10:00	<i>Channel Estimation & Tracking for Wireless Comm Systems 1</i>	<i>MAC Protocols for Wireless Networks 1</i>	<i>MIMO 2</i>	<i>Cooperative Networks</i>	<i>Wireless Comms: 3G and Beyond 1 OFDM technology</i>	<i>Wireless Ad hoc & Sensor Networks 1</i>	<i>Vehicle Power and Propulsion 1</i>	<i>Wireless QoS</i>	<i>Mobile Satellite</i>
10:00-10:30	Refreshment Break (Salon 4 & 5)								
	<i>Session 5A</i>	<i>Session 5B</i>	<i>Session 5C</i>	<i>Session 5D</i>	<i>Session 5E</i>	<i>Session 5F</i>	<i>Session 5G</i>	<i>Poster 5P</i>	<i>Poster 5Q</i>
10:30-12:15	<i>Channel Estimation & Tracking for Wireless Comm Systems 2</i>	<i>MAC Protocols for Wireless Networks 2</i>	<i>MIMO 3</i>	<i>WLAN</i>	<i>Wireless Comms: 3G and Beyond 2 B3G Wireless</i>	<i>Wireless Ad hoc & Sensor Networks 2</i>	<i>Vehicle Power and Propulsion 2</i>	<i>IP Mobility</i>	<i>Adaptation of Wireless Systems & Parameters Estimation</i>
12:15-13:45	Awards Luncheon (Pavilion)								

13:45-15:30	Session 6A	Session 6B	Session 6C	Session 6D	Session 6E	Session 6F	Session 6G	Poster 6P	Poster 6Q
	Channel Estimation & Tracking for Wireless Comm Systems 3	Transceiver Techniques	MIMO 4	IP Mobility 1	Wireless Comms: 3G and Beyond 3 3G Wireless	Wireless Ad hoc & Sensor Networks 3	Vehicle Power and Propulsion 3	Cooperative and Integrated Networks	Next Generation & High Speed Networks
15:30-16:00	Refreshment Break (Salon 4 & 5)								
16:00-17:45	Session 7A	Session 7B	Session 7C	Session 7D	Session 7E	Session 7F	Session 7G	Poster 7P	Poster 7Q
	Antennas & Propagation 1	Adaptation of Wireless Systems and Related Parameters Estimation 1	MIMO 5	IP Mobility 2	Wireless Comms: 3G and Beyond 4 Advanced Issues in Wireless	Wireless Ad hoc & Sensor Networks 4	Multimedia Services in Wireless Networks 1	Vehicular Technology	Channel Estimation and Tracking for Wireless Comm Systems
17:30-19:00	Beer & Pizza (Salon 4 & 5)								
19:00-21:00	Technical Panel: "Beyond 3G – The Future of Wireless – Fixed and Mobile Communications Technologies" (International Ballroom South)								
07:00-08:00	Author's Breakfast (Pavilion)								
Room	Salon 1	Salon 2	Salon 3	Salon 6	Salon 7	Salon 8	Crystal Room	Salon 4 & 5	Salon 4 & 5
08:30-10:00	Session 8A	Session 8B	Session 8C	Session 8D	Session 8E	Session 8F	Session 8G	Poster 8P	Poster 8Q
	Antennas & Propagation 2	Adaptation of Wireless Systems and Related Parameters Estimation 2	Space Time Coding	WCDMA	Wireless Comms: 3G and Beyond 5 MUD & Sig. Proc. Issues	Wireless Ad hoc & Sensor Networks 5	Multimedia Services in Wireless Networks 2	Transport Protocols	Access Protocols and Scheduling for Wireless Systems
10:00-10:30	Refreshment Break (Salon 4 & 5)								
10:30-12:15	Session 9A	Session 9B	Session 9C	Session 9D	Session 9E	Session 9F	Session 9G	Poster 9P	Poster 9Q
	Antennas & Propagation 3	Access Protocols and Scheduling for Wireless Systems 1	Advances of MIMO, Space-Time Coding and Signal Proc. 1	cdma2000 & MC-CDMA	Network Performance	Wireless Ad hoc & Sensor Networks 6	Vehicular Electronic Systems: Communications and Control	Wireless Communications 3G and Beyond: OFDM Posters	UWB & Ad Hoc Networking
12:15-13:45	Lunch (Pavilion)								
13:45-15:30	Session 10A	Session 10B	Session 10C	Session 10D	Session 10E	Session 10F	Session 10G	Poster 10P	Poster 10Q
	Channel Modeling	Access Protocols and Scheduling for Wireless Systems 2	Advances of MIMO, Space-Time Coding and Signal Proc. 2	CDMA	Transport Layer Protocols 1	Scalable Autonomous Networking	Wireless QoS 1	Wireless Communications 3G and Beyond	Wireless Ad hoc, and Sensor Networks Posters
15:30-16:00	Refreshment Break (Salon 4 & 5)								
16:00-17:45	Session 11A	Session 11B	Session 11C	Session 11D	Session 11E	Session 11F	Session 11G	Poster 11P	
	Channel Simulation	Access Protocols and Scheduling for Wireless Systems 3	Wireless LAN/Cellular Inter-networking	OFDM	Transport Layer Protocols 2	UWB & Bluetooth	Wireless QoS 2	Modulation & Coding	

Thursday, October 9, 2003